

APPENDIX A



Linda S. Adams
Secretary for
Environmental Protection

Department of Toxic Substances Control

Maureen F. Gorsen, Director
8800 Cal Center Drive
Sacramento, California 95826-3200



Arnold Schwarzenegger
Governor

March 15, 2007

Mr. Buzz Winchell
860 Riske Lane
West Sacramento, California 95961

PRELIMINARY ENDANGERMENT ASSESSMENT APPROVAL FOR SACRAMENTO STUCCO, WEST SACRAMENTO, CALIFORNIA

Dear Mr. Winchell:

The Department of Toxic Substances Control (DTSC) has received and reviewed the document titled "Sacramento Stucco Report of Findings" dated December 14, 2006. This Supplemental Site Investigation (SSI) Report further defines the extent of lead impacts to Site soil and provides additional information on Title 22 metals (CAM 17 metals). This additional information adequately identifies the concerns associated with the Sacramento Stucco Site therefore; the Preliminary Endangerment Assessment "Equivalent" Report is hereby approved.

The SSI Report concludes that lead was detected in 16 of the 20 targeted site locations in the area where the previous property owner, C&S Battery and Lead, conducted business. There was one location where arsenic was found above the proposed background level of 8-10 milligrams per kilograms (mg/kg). Antimony was also detected at the targeted site location above the California Human Health Screening Level (CHHSL), 30 mg/kg, published by the California Environmental Protection Agency for residential use.

The sampling analysis data portion of the report indicated elevated levels of lead as high as 19,000 mg/kg, arsenic as high as 31 mg/kg and antimony as high as 39 mg/kg were present in Site soils. Although the lead impacted soil is not fully characterized, the Removal Action Workplan (RAW) will include a detailed post-excavation confirmation sampling plan using a hand held XRF for field screening soils in order to remove contaminated soil above 150 mg/kg. Soil contaminated with antimony above the CHHSL screening level of 30 mg/kg shall also be removed and sent to the appropriated landfill. Soil contaminated with arsenic above the background level, which has yet to be determined, shall also be removed from the Site. The RAW will provide justification for the arsenic background level. The report concluded that a RAW will be submitted by April 1, 2007 to address the excavation of the contaminated Site soils.

Mr. Buzz Winchell
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DTSC requests that the proponent prepare a Draft RAW consistent with the requirements of the H&SC Section 25356.1.

In addition DTSC request that you provide a mailing list of residents and business within 1/4 mile radius of the Site and assist the Public Participation Specialist with developing a fact sheet. In accordance with H&SC section 25356.1(e) which outlines the public noticing requirements DTSC requires that you:

1. Circulate the draft plan for at least 30 days,
2. Notify affected local and state agencies,
3. Publish a notice in a newspaper of general circulation in the area, and
4. Hold a public meeting, if necessary.

DTSC appreciates your efforts to address conditions at the Site and looks forward to working with you to complete the assessment and remediation of the Site in an efficient and timely manner. If you should have any questions, please call Ms. Leona Winner, Project Manager for this Site at (916) 255-6679 or me at (559) 297-3929.

Sincerely,



James L. Tjosvold, P.E., Chief
Northern California-Central Cleanup Operations Branch

cc: Mr. K. Greg Peterson, Esq.
1716 L Street
Sacramento, California 95814

Dr. Ljaz S. Jamall
2033 Howe Avenue Suite 240
Sacramento, California 95825

Mr. Fred J. Musser
Sun Valley Land Development Company
4471 Stonebridge Drive, Suite B
Pleasanton, California 94588

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cc: Ms. Leona Winner
Project Manager
Brownfields Revitalization Unit
Department of Toxic Substances Control
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Sacramento, California 95826

APPENDIX B

Community Profile Outline

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Site/Project Name: Sacramento Stucco Company

Site Project Description: The site is presently operating as a stucco warehouse and retail sale facility as the Sacramento Stucco Company. They import raw material and produce bagged stucco products.

The property was reportedly occupied by the C&S Battery and Lead Company (C&S) from 1973 to 1978. C&S reclaimed lead from batteries. Between 1979 and 1981, C&S performed an investigation and excavated and disposed of soils containing lead above the then applicable cleanup criterion of 1,000 ppm under the oversight of the Department of Health Services (DHS). On March 21, 1981, the DHS issued a *No Further Action* letter for the site. Recent sampling by ENGEO as part of a proposed sale of the property revealed a few hot spots with lead over the current risk-based screening level of 150 ppm. Under a Voluntary Cleanup Agreement with DTSC, the remaining leads in soils at the site will be characterized and remediated as necessary.

Location and size of site project: 860 Riske Lane, W. Sacramento, California. The site is approximately 1.16 acre property (ENGEO, Phase 1, December 7, 2005).

Description of surrounding land uses and environmental resources: The site is in a largely industrial area and is surrounded by a railroad siding, vacant land and a truck maintenance yard to the north. On the east are a parking lot used by the Rivercats and a warehouse transfer station used for aluminum can recycling. The adjoining properties to the south are occupied by an off-ramp from the Capital City Freeway/Highway 50 and a mobile home trailer park. On the

west, the site is bounded by a railroad siding and vacant land (ENGEO, Phase 1, December 7, 2005).

Local Awareness and Interest:

We are unaware if the community has any awareness of the project. To our knowledge, there have been no meetings, presentations or other outreach efforts taken to inform the community about the site. To our knowledge, there has been no contact by community members.

Media Coverage: There has been media coverage in the 1970s and early 1980s when C&S operated the lead recycling facility and when this was remediated. However, are unaware of any current media coverage of this site.

Government involvement: The DTSC is involved in the current site investigation. Yolo County had oversight in the past (1993-1995) during the investigation and remediation of two underground storage tanks (USTs) on the property. A *No Further Action* Letter was issued by Yolo County on the USTs on February 27, 1995.

Key Contact List:

City Manager:	Mr. Toby Ross, 916-617-4500
City/County Planning Department:	Mr. Steve Rikala, 916-617-4645
Department of Toxic Substance Control:	Ms. Leona Winner, 916-255-6679
Risk-Based Decisions, Inc.:	Dr. Ijaz S. Jamall, 916-923-0570

Key Issues and Concerns:

There are no specific concerns or issues raised by the community regarding the site or operational activities conducted at the site.

Any anticipated concerns/issues regarding the site: No. The current investigation involves delineation and removal of any remaining lead over acceptable regulatory thresholds in soil.

Any environmental concerns or other projects with high controversy in the community: None that we are aware of at the writing of this document.

Recommended Public Participation Activities: Such participation will likely depend on the magnitude of the removal of lead-impacted soils.

Recommended public participation activities beyond those required by regulation or law: Such participation does not appear to be necessary given the location of the site and the limited scope of the project.

Department of Public Participation Specials Approval:

Signature

Date

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115 TOWER ST
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DALE PAYNE
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SANTA ROSA, CA 95404-2447

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DAN VISTICA CFO
400 BALL PARK DR
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K REDDY-FLAGSTONE MOTEL
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JACK R KASPER CONTROLLER
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FEDERAL WAY, WA 98063-9777

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APPENDIX C

**TABLE D-1
FEDERAL CHEMICAL-SPECIFIC ARARs**

Requirement	Prerequisite	Citation	ARAR Determination	Comments
Resource Conservation and Recovery Act (RCRA)/HWCA*				
Definition of RCRA hazardous waste	Waste soil or wastewater	Title 22 CCR Sections 66261.21, 66261.22(a)(1), 66261.23 66261.24(a)(1), and 66261.100	Not an ARAR	Based on results from the PEA, a portion of the soil may be classified as a RCRA hazardous waste is anticipated. Hazardous waste determinations would be made at the time the waste is generated
Land Disposal Restrictions	Waste soil	Title 22 CCR Section 66268 40 CFR Part 268	Potentially applicable	The applicable standard for land disposal is based on the Universal Treatment Standard (UTS). The UTS for the COPC will very based on the chemical constituents present. The land disposal standards for hazardous waste soils were relaxed to 10-times the UTS.
Toxic Substances Control Act (TSCA)				
Regulates use and manufacture of toxic substances and storage	The Act secure information on all new chemical substances. It controls these substances to determined causes of an unreasonable risk to the public health and/or environment	40 CFR 76160, excluding 761.600(a)(B and D), 761.60(a)(3)(iii)(3), 761.60(e), 761.60(f), 761.65 (a&b), 761.65(c), except 761.65(c)(9) 761.65(e)(6)(ii and III); 761.65(e)(7 and 8); 761.79(15 USC 2601, et seq.)	Not applicable	This requirement is applicable when it is necessary to follow up on information related to potential toxic chemicals and unknown health hazards. However, the BRHS site is not a manufacturer and lead and arsenic are well understood COPC.
Clean Water Act (CWA) 33 USC 1251-1376				
Regulates discharges of water from a facility or Site including site runoff	Wastewater discharge to a water body	40 CFR 100-149	Not an ARAR	Because of the shallow depth to bedrock, there is no groundwater beneath the site and impacts to groundwater would not be expected. Stormwater runoff during remediation may require control.
Safe Drinking Water Act (SDDWA) 42 USC 300f-300j				
Regulates the quality of drinking water supply and lists maximum contaminant levels	Drinking water	40 CFR 141-143	Not applicable	Maximum Contaminant Limits are considered ARARs but no groundwater impact is plausible.
Clean Air Act (CAA), 40 USC 7401 et seq.				
National Ambient Air Quality Standards (NAAQS) Primary and secondary standards for ambient air quality to protect public health and welfare including standards for particulate matter and lead.	Contamination of air affecting public health and welfare	40 CFR 50.4-50.12	Potentially applicable for response actions	For Lead, the standard is 1.5 µg/m ³ over a caldenar quarter. There is no AAQS for arsenic. These requirements will be discussed further in the action-specific ARARs
Provisions of State Implementation Plan (SIP) approved by EPA under Section 110 of CAA	Major sources of air pollutants.	40 USC 7410; portions of 40 CFR 52.220 applicable to Northern Sierra Air Quality Management District	Potentially applicable for response actions	Emission of air pollutants regulated by SIP are possible at the Site. These requirements will be evaluated further in the action specific ARARs

*Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader. Listing the statutes and policies does not indicate that the preparer accepts the entire statutes or policies as potential ARARs. Specific potential ARARs follow each general heading, only substantive requirements of the specific citations are considered potential ARARs.

ARAR – Applicable or relevant and appropriate requirement

CAA– Clean Air Act

CCR – California Code of Regulations

CFR – Code of Federal Regulations

EPA- U.S. Environmental Protection Agency

FIFRA – Federal Insecticide, Fungicide, and Rodenticide Act

NAAQS –National Ambient Air Quality Standards (primary and secondary)

RCRA – Resources Conservation and Recover Act

RI- Remedial Investigation

SIP – State Implementation Plan

TBC – To be considered

TFCA – Toxic Substances Control Act

USC – United States Code

Chemical-specific concentrations used for the FS may not be ARARs indicated in this table, but may be concentrations based upon other factors. Such factors may include the following:

- Human health risk-based concentrations (risk-based; PRGs 40 CFR 400.540(e)(A)(1) and (2)).
- Ecological risk-based concentrations (40 CFR 300.430(e)(G)).
- Practical quantization limits of contaminations (40 CFR 300.430(e)(A)(3)).

Many potential action-specific ARAS contain chemical-specific limitations and are addressed in the action-specific ARAR tables.

TABLE D-2

STATE CHEMICAL-SPECIFIC ARARs

Requirement	Prerequisite	Citation	ARAR Determination	Comments
Cal-EPA Department of Toxic Substances Control				
Definition of "Non-RCRA hazardous waste"	Waste	Title 22 CCR Sections 66261.22(a)(3) and (4), 66261.24(a)(2) to (a)(8), 66261.101, 66261.3(a)(2)(C), and 66261.3(a)(2)(F)	Applicable	Results from the PEA indicate that this soil maybe a RCRA hazardous waste. Soil will be considered a hazardous waste if confirmed is obtained by testing.
State and Regional Water Quality Control Board (RWQCB)				
Authorizes the State and Regional Boards to establish in Water Quality Plans beneficial uses and numerical and narrative standards to protect both surface and groundwater quality.	Waste discharge	California Water Code, Division 7, Section 13241, 13243, 13263(a), and 13360 (Porter-Cologne Water Quality Control Act)	Not applicable	Substantive provisions are ARARs but no groundwater exists at the site because of the shallow depth of bedrock.
Regulates use and manufacture of toxic substances and storage	Waste discharge	Central Valley Region Basin Plan	Not applicable	Substantive provisions in Chapters 3, 4 and 5 of the plan are ARARs, including beneficial use designations, water quality objectives, and water discharge limits but do not apply to this site.
Air Resource Board (ARB)				
Ambient Air Quality Standard authorizes CARB to protect public health from exposure to listed substances	Waste	CARB (7/19/03)	Applicable	For lead, the value is 1.5 mg/m ³ as a 30 day average.
<p>Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader. Listing the statutes and policies does not indicate that the preparer accepts the entire statutes or policies as potential ARARs. Specific potential ARAs are addressed in the table below each general heading; only substantive requirements of specific citations are considered potential ARARs.</p> <p>ARAR – Applicable or relevant and appropriate requirements.</p> <p>RCRA – Resource Conservation and Recovery Act</p> <p>Chemical-specific concentrations used for removal action alternative evaluation may not be ARAs indicated in the table, but may be concentrations based upon other factors. Such factors may include the following:</p> <ul style="list-style-type: none"> Human Health risk-based concentrations (Risk-based PRGs) (40 CFR 300.430(e)(A)(1) and (2)) Ecological risk-based concentrations (40 CFR 300.430(e)(G)) Practical quantization limits of contaminants (40 CFR 300.430(e)(A)(3)) 				

**TABLE D-3
FEDERAL LOCATION-SPECIFIC ARARs**

Location	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Archaeological Resources Protection Act, 16 USC Section 469 et seq.					
Within area where action, may cause irreparable harm, loss, or destruction of significant artifacts	Construction on previously undisturbed land would require an archaeological survey of the area.	Alteration of terrain that threatens significant scientific, prehistoric, historic, or archaeological data	Substantive requirements of 36 CFR 65	Not applicable	Site located in developed area
National Historic Preservation Act, 16 USC Section 470					
Historic project owned or controlled by Federal agency	Action to preserve historic properties, planning of action to minimize harm to national historic landmarks	Property included in or eligible for the National Historic Register of Historic Places	Substantive requirements of 36 CFR 800	Not applicable	Site located in developed area
Endangered Species Act of 1973					
Critical habitat upon which endangered species or threatened species depend	Action to conserve endangered species or threatened species, including consultation with the Department of the Interior	Determination of effect upon endangered or threatened species or their habitat	16 USC 1536(a)	Applicable	There are no critical habitats in the immediate vicinity of the Site.
Executive Order 11990, Protection of Wetlands					
Wetland	Action to minimize the destruction, loss or degradation of wetlands	Wetlands as defined by Executive Order 11990, Section 7	40 CFR 6, Appendix A (excluding Sections 6(a)(2), (4), and (6)); 40 CFR 6.302	Not applicable	There are no wetlands in the immediate vicinity
Clean Water Act, Section 404					
Wetland	Action to prohibit discharge of dredged or fill material into wetland without permit. Mitigation may be required to avoid net loss of wetlands.	Wetland as defined by Executive Order 11990, Section 7	40 CFR 230.10; 40CFR 231 (excluding 231.1, 231.2, 231.7, and 231.8)	Not applicable	There are no wetlands in the immediate vicinity

TABLE D-3
FEDERAL LOCATION-SPECIFIC ARARs (CONTINUED)

Location	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Wilderness Act					
Wilderness Area	Area must be administered in a manner that will leave it unimpaired as wilderness and preserve its wilderness character.	Federally owned area designated as wilderness area	50 CFR 35.1 et seq.	Not applicable	The site is not located in a federally owned wilderness area.
National Wildlife Refuge System					
Wildlife Refuge	Only actions allowed under the provisions of 16 USC 668 dd may be undertaken in areas that are part of the National Wildlife Refuge Systems	Area designated as part of the National Wildlife Refuge Systems	50 CFR 27	Not an ARAR	Site is not in a designated National Wildlife Refuge.
Fish and Wildlife Coordination Act, Section 662					
Area affecting stream or other water body	Action taken should protect fish and wildlife	Diversion, channeling, or other activity that modifies a stream or other water body and affects fish or wildlife.	16 USC 662	Not an ARAR	There are no water bodies on the site.
Wild and Scenic Rivers Act					
Within area affecting national wild, scenic, or recreational river	Avoid taking or assisting in an action that will have direct adverse effect on scenic river.	Activities that affect or may affect any of the rivers specified in 16 USC 1276(a)	16 USC 1271 et seq., Section 7(a)	Not an ARAR	The Site and vicinity contain no designated wild, scenic, or recreational rivers
Historic Sites, Buildings and Antiquities Act					
Historic sites	Avoid undesirable impacts on landmarks	Areas designated as historic sites	16 USC 461-467	Not applicable	
Migratory Bird Treat Act of 1972					
Migratory bird area	Protects almost all species of native birds in the United States from unregulated "take", which can include poisoning at hazardous waste sites.	Presence of migratory birds	16 USC 703	Not an ARAR	

*Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader. Specific potential ARARs follow each general heading.

ARAR – Applicable or relevant and appropriate requirement
CCC – California Coastal Commission
CCR – California Code of Regulations
CFR – Code of Federal Regulations
HWCA – Hazardous Waste Control Act
RWQCB – California Regional Water Quality Control Board
SHPO – State Historical Preservation Officer
USC – United States Code

TABLE D-4

STATE LOCATION-SPECIFIC ARARs

Location	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Fish and Game Code*					
Endangered Species Habitat	Ensures that action taken will not jeopardize the survival and reproduction of any threatened or endangered species		Fish and Game Code Sections 2090-2096	Not an ARAR	Not effective after 1 January 1994
<p>*Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader. Listing the statutes and policies does not indicate that the preparer accepts the entire statutes or policies as potential ARARs. Specific potential ARARs follow each general heading, only substantive requirements of the specific citations are considered potential ARARs.</p> <p>ARAR – Applicable or relevant and appropriate requirement CCR – California Code of Regulations</p>					

**TABLE D-5
FEDERAL ACTION-SPECIFIC ARARs**

Alternatives: 1 – No Further Action, 2- Capping, 3- Excavation with Off-Site Disposal							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Resource Conservation and Recovery Act (RCRA) 42 USC 6901 et seq.							
On-Site waste generations	Person who generates waste shall determine if that waste is a hazardous waste	Waters of the state.	California Water Code, Division 7, Section 13241, 13243, 13263(a), and 13360 (Porter-Cologne Water Quality Control Act)	2,3			Applicable for any operation where waste is generated
Hazardous waste accumulation	Generator may accumulate waste on-Site for 90 days or less or must comply with requirements for operating a storage facility	Accumulate hazardous waste	22 CCR Section 66262.34	2,3			Accumulation of hazardous wastes on Site for longer than 90 days would be subject to RCRA requirements for storage facilities
Recordkeeping	Generator must keep records	Generate hazardous waste	22 CCR Section 66262.40	2,3			Applicable if hazardous wastes are accumulated for longer than 90 days.
Container storage	Containers of RCRA hazardous waste must be: <ul style="list-style-type: none">Maintained in good conditionCompatible with hazardous waste to be storedClosed during storage except to add or remove waste	Storage of RCRA hazardous waste not meeting small quantity generator criteria held for a temporary period greater than 90 days before treatment, disposal or storage elsewhere, in a container	22 CCR 66264.171, 172, 173	2,3			See comment above
	Inspect container storage areas weekly for deterioration		22 CCR 66264.174	2,3			See comment above
	Place containers on a sloped, crack-free base, and protect from contact with accumulated liquid. Provide containment system with a capacity of 10 percent of the volume of containers of free liquids. Remove spilled or leaked waste in a timely manner to prevent overflow of the containment system.		22 CCR 66264.175(a) and (b)	2,3			See comment above
	Keep containers of ignitable or reactive waste at least 50 feet from the facility property line.		22 CCR 66264.176	2,3			See comment above
	Keep incompatible materials separate. Separate incompatible materials stored near each other by a dike or other barrier.		22 CCR 66264.177	2,3			See comment above
	At closure, remove all hazardous waste and residues from the containment system, and decontaminate or remove all containers, liners.		22 CCR 66264.178	2,3			Potentially applicable for all alternatives generating hazardous waste

Excavation	Movement of excavated materials to new location and placement in or on land will trigger land disposal restrictions for the excavated waste or closure requirements for the unit in which the waste is being placed.	Materials containing hazardous wastes subject to land disposal restrictions are placed in another unit.	22 CCR 66268.40	2,3		2	Applicable for Alternative 2, 3 or 4 which may involve off-site disposal.
	Area from which materials are excavated may require cleanup to levels established by closure requirements.	Hazardous waste placed at Site after the effective date of the requirements.	22 CCR 66264.228(a), (b), (e), through (k), (m), (o) through (q); 22 CCR 66264.258(a) and (b), except as it cross-references procedural requirements.				Not an ARAR. Requirements in 23 CCR 2582 are more stringent.

D-5
FEDERAL ACTION-SPECIFIC ARARs (Continued)

Alternatives: 1 – No Further Action, 2- Capping, 3- Excavation with Off-Site Disposal							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Treatment when waste will be land disposed	Treatment of waste subject to ban on land disposal must attain levels achievable by best demonstrated available treatment technologies (BOAT) for each hazardous constituent in each listed waste, if residual is to be land disposed.	Placement of RCRA hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, or underground mine or cave	22 CCR 66268.40 and 42			3	Potentially applicable to alternatives involving disposal of hazardous waste off Site.
Placement of waste in land disposal unit	Attain land disposal treatment standards before putting waste into landfill in order to comply with land ban restrictions		22 CCR 66268.40	3			Applicable for soil which is a listed hazardous waste that is regulated under land disposal restrictions
Groundwater monitoring	Owners/operators of RCRA surface impoundment, waste pile, land treatment unit, or landfill shall conduct a monitoring and response program	Surface impoundment, waste pile, land treatment unit, or landfill for which constituents in or derived from waste in the unit may pose a threat to human health or the environment.	22 CCR 66264.90(a) and (c), 66264.91(a) and (c), 66264.92-95, 66264.97-98, except as it cross-references permit requirements			1,2,3	
Clean Air Act (CAA) 40 USC 7401 et seq.							
Discharge to air	Provisions of State Implementation Plan (SIP) approved by EPA under Section 110 of CCA	Major sources of air pollutants	40 USC Section 7410; portions of 40 CFR Section 52.220 applicable to Northern Sierra Air Quality Management District		2,3		See Table D-6 for state ARARs for air.
	National Primary and Secondary Ambient Air Quality Standards (NAAQS) – standards for ambient air quality to protect public health and welfare (including standards for particulate matter and lead).	Contamination of air affecting public health and welfare	40 CFR Sections 50.4-50.12		3		
U.S Department of Transportation, 49 USC 1802, et seq.							
Hazardous Materials Transportation	No person shall represent that a container or package is safe unless it meets the requirements of 49 USC 1802, et seq. or represents that a hazardous material is present in a package or motor vehicle if it is not.	Interstate carriers transporting hazardous waste and substances by motor vehicle. Transportation of hazardous material under contract with any department of the executive branch of the Federal government	49 CFR 171.2(f)	3			Substantive portions of these requirements would be ARARs for transport of hazardous materials on Site. Off-site transport must comply with both substantive and administrative requirements.
	No person shall unlawfully alter or deface labels, placards, or descriptions, packages, containers, or motor vehicles used for transportation of hazardous materials.		49 CFR 171.2(g)	3			See comment above

Hazardous Materials Marking, Labeling, and Placarding	Each person who offers hazardous material for transportation or each carrier that transports it shall mark each package, container, and vehicle in the manner required.	Person who offers hazardous material for transportation; carries hazardous material; or packages, labels, or placards hazardous material.	49 CFR 172.300	3			See comment above
	Each person offering non-bulk hazardous materials for transportation shall mark the proper shipping name and identification number (technical name) and consignee's name and address.		49 CFR 172.301	3			See comment above

**TABLE D-5
FEDERAL ACTION-SPECIFIC ARARs (Continued)**

Alternatives: 1 – No Further Action, 2- Capping, 3- Excavation with Off-Site Disposal							
Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Hazardous Materials Marking, Labeling, and Placarding	Hazardous materials for transportation in bulk packages must be labeled with proper identification (ID) number, specified in 49 CFR 172.101 table, with required size of print. Packages must remain marked until cleaned or refilled with material requiring other markings.		49 CFR 172.302	3			See comment above
	No package marked with a proper shipping name or ID number may be offered for transport or transported unless the package contains the identified hazardous material or its residue.		49 CFR 172.303	3			See comment above
	The markings must be durable, in English, in contrasting colors, un-obsured, and away from other markings.		49CFR 172.304	3			See comment above
	Labeling of hazardous material packages shall be as specified in the list.		49 CFR 172.400	3			See comment above
	Non-bulk combination packages containing liquid hazardous materials must be packed with closures upward, and marked with arrows pointing upward.		49 CFR 172.312	3			See comment above
	Each bulk packaging or transport vehicle containing any quantity of hazardous material must be placarded on each side and each end with the type of placards listed in Tables 1 and2 of 49 CFR 172.504.	Each person who offers for transport or transports any hazardous material shall comply with these placarding requirements.	49 CFR 172.504	3			See comment above
*Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader. Listing the statutes and policies does not indicate that the preparer accepts the entire statutes or policies as potential ARARs. Specific potential ARARs follow each general heading, only substantive requirements of the specific citations are considered potential ARARs.							
A – Applicable ARAR – Applicable or relevant and appropriate requirement CAA– Clean Air Act CCR – California Code of Regulations CERCLA- Comprehensive Environmental Response, Compensation, and Liability Act CFR – Code of Federal Regulations CWA- Clean Water Act EPA- U.S. Environmental Protection Agency				NAAQA –National Ambient Air Quality Standards (primary and secondary) NESHAPS – National emission standards for hazardous air pollutants NPDES – National Pollution Discharge Elimination System RA – Relevant and Appropriate RCRA – Resource Conservation Recovery Act RWQCB – California Regional Water Quality Control Board SWRCB – California State Water Resources Control Board SDWA – Safe Drinking Water Act SIP – State Implementation Plan TBC – To be considered USC – United States Code			

TABLE D-6
STATE ACTION-SPECIFIC ARARs

Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
State Water Resources Control Board (SWRCB) and Regional Water Quality Control Board (RWQCB)							
Discharge Affecting Water Quality	Authorizes the State and Regional Water Boards to establish in Water Quality Control Plans beneficial uses and numerical and narrative standards to protect both surface and ground water quality. Authorizes regional water boards to issue permits for discharges to land or surface or ground water that could affect water quality, including NDPES permits, and to take enforcement action to protect water quality.	Waters of the state.	California Water Code, Division 7, Section 13241, 13243, 13263(a), and 13360 (Porter-Cologne Water Quality Control Act)		2,3		
Northern Sierra Air Quality Management District (NSIAQMD)							
Discharge to air	Limits visible emissions from any point source to Ringelmann No.1 (or 20 percent capacity) for 3 minutes in any hour.	Visible emission to atmosphere		3			Dust generated during removal actions will be controlled.
	Prohibits the discharge of any air emissions in quantities that may cause injury, detriment, nuisance, or annoyance to the public.			3			Dust generated during removal actions will be controlled
	Limits on-site activities so that fugitive dust at the property line shall not be visible and the downwind particulate concentration shall not be more than 100 micrograms per cubic meter, averaged over 5 hours, above the upwind particulate concentration. Also requires reasonable precaution to minimize fugitive dust and prevent and cleanup any material accidentally deposited on paved streets.	These requirements do not apply if the wind speed averaged over 15 minutes, is above 15 miles per hour.		3			Dust generated during removal actions will be controlled
*Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader. Listing the statutes and policies does not indicate that the preparer accepts the entire statutes or policies as potential ARARs. Specific potential ARARs follow each general heading, only substantive requirements of the specific citations are considered potential ARARs.							
A – Applicable ARAR – Applicable or relevant and appropriate requirement CAA– Clean Air Act CCR – California Code of Regulations CERCLA- Comprehensive Environmental Response, Compensation, and Liability Act CFR – Code of Federal Regulations CWA- Clean Water Act EPA- U.S. Environmental Protection Agency			NAAQA –National Ambient Air Quality Standards (primary and secondary) NESHAPS – National emission standards for hazardous air pollutants NPDES – National Pollution Discharge Elimination System RA – Relevant and Appropriate RCRA – Resource Conservation Recovery Act RWQCB – California Regional Water Quality Control Board SWRCB – California State Water Resources Control Board SDWA – Safe Drinking Water Act SIP – State Implementation Plan TBC – To be considered USC – United States Code				

APPENDIX D

YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT

RULE 2.3 - RINGELMANN CHART

A person shall not discharge into the atmosphere from any single source of emission whatsoever, any air contaminant for a period or periods aggregating more than 3 minutes in any one hour which is:

- a. As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines; or
- b. Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection a. of this rule.

YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT

RULE 2.5 - NUISANCE

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public or which cause to have a natural tendency to cause injury or damage to business or property.

YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT

RULE 2.11 - PARTICULATE MATTER

Except as otherwise permitted by law, no person shall release or discharge into the atmosphere, from any source, particulate matter in excess of 0.3 grains per cubic foot of exhaust volume as calculated standard conditions.

YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT

RULE 2.19 - PARTICULATE MATTER PROCESS EMISSION RATE

- a. No person shall discharge in any one hour from any process unit except for motor vehicles, implements of husbandry, and certain agricultural facilities as given in b. and c. particulate matter of a weight in excess of the amount shown for the corresponding process weight per hour in the following table. Use the process weight per hour as defined in Rule 1.2.y. to find the corresponding allowable process emission rate.
- b. Where the requirements of the Federal Primary Air Quality Standards for Particulate Matter are met in the vicinity of any new facility and associated operations which are necessary to sustain agricultural operations, the process weight emission requirements for particulate matter shall apply only to those emissions of aerodynamic size diameter of 10 microns or less provided that any emissions do not constitute a nuisance and provided that:
 1. No more than 10 family residences are within a 1/4 mile radius of the facility;
 2. No zoned boundaries for other than agricultural and heavy industry are within one (1) mile of the facility;
 3. No city limit is within two (2) miles of the facility.
- c. Where the requirements of the Federal Primary Air Quality Standards for Particulate Matter are met in the vicinity of any existing facility and associated operations which are necessary to sustain agricultural operations, the process weight emission requirements shall apply only to those emissions of aerodynamic size diameter of 10 microns or less provided that any emissions do not constitute a nuisance.

TABLE

PROCESS WEIGHT VS ALLOWABLE EMISSION RATE PER HOUR

Process Weight Lbs/Hr		Allowable Emission Rate Lbs/Hr
More Than	To and Including	
0	400	1
400	800	2
800	1500	3
1500	2200	4
2200	2900	5
2900	4100	6
4100	5400	7
5400	7000	8
7000	8500	9
8500	10000	10

10000	11600	11
11600	13200	12
13200	14800	13
14800	16400	14
16400	18000	15
18000	19600	16
19600	21300	17
21300	23000	18
23000	24700	19
24700	26500	20
26500	28300	21
28300	30000	22
30000	31700	23
31700	33300	24
33300	35000	25
35000	36700	26
36700	38300	27
38300	40000	28
40000	41700	29
41700	43300	30
43300	45000	31
45000	46700	32
46700	48300	33
48300	50000	34
50000	51700	35
51700	53300	36
53300	55000	37
55000	56700	38
56700	58300	39
58300	-----	40

YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT

RULE 3.13 - TOXICS NEW SOURCE REVIEW*Adopted June 9, 1999***100 GENERAL**

101 PURPOSE

102 APPLICABILITY

103 EFFECTIVE DATE

104 EXEMPTIONS

200 DEFINITIONS

201 BEST AVAILABLE CONTROL TECHNOLOGY FOR TOXICS

202 CONSTRUCT A MAJOR SOURCE

203 GREENFIELD SITE

204 HAZARDOUS AIR POLLUTANTS

205 MAJOR SOURCE OF HAPS

206 POTENTIAL TO EMIT

207 RECONSTRUCT A MAJOR SOURCE

208 STATIONARY SOURCE

300 STANDARDS**400 CALCULATION PROCEDURES****500 ADMINISTRATIVE PROCEDURES**

100 GENERAL

101 **PURPOSE:** The purpose of this Rule is to require the installation of best available control technology for toxics (T-BACT) at any constructed or reconstructed major source of hazardous air pollutants (HAPs).

102 **APPLICABILITY:** The requirements of this Rule shall apply to any owner or operator that constructs or reconstructs a major source of HAPs, as described in section 112(g) of the federal Clean Air Act (CAA), unless the major source is exempt pursuant to Section 110 of this Rule.

Compliance with this rule does not relieve any owner or operator of a major source of HAPs from complying with all other District rules or regulations, any applicable State airborne toxic control measure (ATCM), or other applicable State and Federal laws.

103 **EFFECTIVE DATE:** This Rule is effective on June 9, 1999.

110 **EXEMPTIONS:** The provisions of this Rule do not apply to:

110.1 Any major source of HAPs that is subject to an existing National Emissions Standard for Hazardous Air Pollutants (NESHAPs) pursuant to Sections 112(d), 112(h) or 112(j) of the federal Clean Air Act (CAA);

110.2 Any major source of HAPs that has been specifically exempted from regulation under a

NESHAP issued pursuant to Sections 112(d), 112(h) or 112(j) of the CAA;

110.3 Any major source of HAPs that has received all necessary air quality permits for such construction or reconstruction before June 29, 1998;

110.4 Electric utility steam generating units, unless and until such time as these units are added to the source category list pursuant to section 112(c)(5) of the CAA;

110.5 Any stationary sources that are within a source category that has been deleted from the source category list pursuant to Section 112(c)(9) of the CAA;

110.6 Research and development activities as defined in 40 CFR part 63, subpart B, section 63.41;

110.7 Any other stationary source exempted by section 112 of the CAA.

200 DEFINITIONS: Terms used in this Rule that are not defined in this section have the meaning given to them in the CAA, 40 CFR part 63, Sections 63.2 and 63.41, and District Rule 3.4. New Source Review.

201 BEST AVAILABLE CONTROL TECHNOLOGY FOR TOXICS (T-BACT): The most effective emissions limitation or control technique which:

201.1 Has been achieved in practice for such permit unit category or class of sources; or

201.2 Is any other emissions limitation or control technique, including process and equipment changes of basic and control equipment, found by the Air Pollution Control Officer to be technologically feasible for such a category or class of sources, or for a specific source.

202 CONSTRUCT A MAJOR SOURCE:

202.1 To fabricate, erect, or install at any green-field site a stationary source or group of stationary sources which is located within a contiguous area and under common control and which emits or has the potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAPs; or

202.2 To fabricate, erect, or install at any developed site a new process or production unit which in and of itself emits or has the potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAPs, unless the process or production unit satisfies all of the following criteria:

- a. All HAPs emitted by the process or production unit that would otherwise be controlled under the requirements of this subpart will be controlled by emission control equipment which was previously installed at the same site as the process or production unit;
- b.
 - i. The permitting authority has determined within a period of five years prior to the fabrication, erection, or installation of the process or production unit that the existing emission control equipment represented best available control technology (BACT), lowest achievable emission rate (LAER) under 40 CFR part 51 or 52, toxics-best available control technology (T-BACT), or MACT based on State air toxic rules for the category of pollutants which includes those HAP's to be emitted by the process or

- production unit; or
- ii. The permitting authority determines that the control of HAP emissions provided by the existing equipment will be equivalent to that level of control currently achieved by other well-controlled similar sources (i.e., equivalent to the level of control that would be provided by a current BACT, LAER, T-BACT, or State air toxic rule MACT determination);
- c. The permitting authority determines that the percent control efficiency for emissions of HAP from all sources to be controlled by the existing control equipment will be equivalent to the percent control efficiency provided by the control equipment prior to the inclusion of the new process or production unit;
- d. The permitting authority has provided notice and an opportunity for public comment concerning its determination that criteria in paragraphs (a), (b), and (c) of this definition apply and concerning the continued adequacy of any prior LAER, BACT, T-BACT, or State air toxic rule MACT determination;
- e. If any person has asserted that a prior LAER, BACT, T-BACT, or State air toxic rule MACT determination is no longer adequate, the permitting authority has determined that the level of control required by that prior determination remains adequate; and
- f. Any emission limitations, work practice requirements, or other terms and conditions upon which the above determinations by the permitting authority are applicable requirements under Section 504(a) of the CAA and either have been incorporated into any existing title V permit for the affected facility or will be incorporated into such permit upon issuance.

203 GREENFIELD SITE: A contiguous area under common control that is an undeveloped site.

204 HAZARDOUS AIR POLLUTANTS (HAPS): Any air pollutant listed in or pursuant to Section 112(b) of the CAA.

205 MAJOR SOURCE OF HAPS: Any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.

206 POTENTIAL TO EMIT (PTE): The maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitations or the effect it would have on emissions are incorporated into the applicable permit as enforceable permit conditions.

207 RECONSTRUCT A MAJOR SOURCE: The replacement of components of an affected or a previously unaffected stationary source to such an extent that:

207.1 The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable process or production unit; and

207.2 It is technologically and economically feasible for the reconstructed source to meet the relevant standard(s) established pursuant to Section 112 of the CAA.

208 STATIONARY SOURCE: Any building, structure, facility, or installation which emits or may emit any air pollutant.

300 STANDARDS: Any person constructing or reconstructing a major source of HAPs shall apply T-BACT unless the major source of HAPs is exempt pursuant to section 110 of this Rule. All T-BACT determinations shall ensure a level of control that the Air Pollution Control Officer (APCO) has determined to be, at a minimum, no less stringent than new source maximum achievable control technology (MACT) as required by Section 112(g)(2)(B) of the CAA, and implemented through 40 CFR part 63, Subpart B, Sections 63.40 through 63.44.

400 CALCULATION PROCEDURES: The potential to emit for a major source of HAPs shall equal the sum of the potentials to emit for all permit units of the constructed or reconstructed major source of HAPs. All fugitive HAP emissions for all permit units associated with the construction or reconstruction shall be included in the potential to emit determination.

500 ADMINISTRATIVE PROCEDURES: An application for authority to construct a major source or reconstruct a major source of HAPs shall be subject to the applicable administrative procedures contained in District Rule 3.4, New Source Review.

APPENDIX E

**HEALTH & SAFETY PLAN
SACRAMENTO STUCCO
860 RISKE LANE
WEST SACRAMENTO, YOLO COUNTY, CALIFORNIA**

Prepared For:

Buzz Winchell
860 Riske Lane
West Sacramento, California 95961

Prepared By:

Risk-Based Decisions, Inc.
2033 Howe Avenue, Suite 240
Sacramento, California 95825

September 14, 2007

HEALTH AND SAFETY PLAN

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1.0 INTRODUCTION

This Health and Safety Plan has been prepared to serve to document health and safety protocols for the soil excavation effort at the 860 Riske Lane in West Sacramento, California.

1.1 Background

Mr. K Greg Peterson has retained Risk-Based Decisions, Inc. to perform a soil investigation for this site.

Site Information

Client Name: Mr. K. Greg Peterson
Location of Site: 860 Riske Lane, West Sacramento, CA 95691
Client Contact Person(s): K. Greg Peterson
Topography of the area surrounding the site:
Hilly ___ Flat X Hummocky ___ Marsh ___ Mountainous ___ Other ___

Area affected:
Urban ___ Rural ___ Residential ___ Industrial X
Commercial ___ Other ___

Types of bodies of water bordering the site, if any:
Stream ___ River ___ Pond ___ Lake ___ Bay ___
Ocean ___ Other ___ None X

Are the services being provided as a consequence of orders from local, state, or federal officials?

Yes X No ___

1.3 Purpose

The primary purpose of the health and safety plan is to provide field personnel and subcontractors with an understanding of the potential chemical and physical hazards that exist or may arise while the tasks of this project are being performed. Secondly, the information contained herein will define the safety precautions necessary to respond to such hazards should they occur.

To help ensure the well being of all field personnel and the community surrounding the site project staff and approved subcontractors shall acknowledge and adhere to the policies and procedures established herein. Accordingly, all personnel assigned to this project shall read this site safety plan and sign the Agreement Statement in Section 8.1 to certify that they have read, understood, and agreed to abide by its provisions.

1.4 Hazard Determination

Serious _____ Moderate _____ Low X Unknown _____

1.5 Level of Protection

X Modified Level D

The minimum acceptable level of protection at this site is a Modified Level D, as described in the 5.0 Section entitled "Health and Safety Requirements."

1.6 Amendments

Any change in the scope of this project and/or site conditions must be amended in writing in the 8.2 Section entitled Site Safety Plan Amendment Sheet and approved by the Health and Safety Manager.

Proposed time frame for the site work: June 15 to July 25, 2007.

2.0 PROJECT PERSONNEL

A Representative of Risk-Based Decisions, Inc. will oversee and act accordingly during all phases of the project. The following management structure will be instituted for the purpose of safely completing this project.

2.1 Project Manager: Ijaz Jamall, Ph.D., DABT, REA-II

The Project Manager will be responsible for implementing the project and obtaining the necessary personnel and resources for the project completion. Specific duties will include:

- providing authority and resources to ensure that the Site Safety Officer is able to implement and manage safety procedures
- preparing reports and recommendations about the project to clients and other concerned parties direct related to the project.
- ensuring that all persons allowed to enter the site (i.e. EPA, contractors, state officials, visitors) are made aware of the potential hazards associated with the substances known or suspected to be on site and are knowledgeable as to the on-site copy of the specific site safety plan

- ensuring that the Site Safety Officer is aware of all of the provisions of this site safety plan and is instructing all personnel on site about the site practices and emergency procedures defined in the plan
- ensuring that the Site Safety Officer is making an effort to monitor the site safety and has designated a Field Team Leader to assist with the responsibility when necessary.

2.2 Health and Safety Manager: Tex Lu, Ph.D.

The Health and Safety Manager shall be responsible for the overall coordination and oversight of the site safety plan. Specific duties will include:

- approving the selection of the types of personal protective equipment (PPE) to be used on site for specific tasks
- monitoring the compliance activities and the documentation processes undertaken by the Site Safety Officer
- evaluating weather and chemical hazard information and making recommendations to the Project Manager about any modifications to work plans or personal protection levels in order to maintain personal safety
- coordinating upgrading or downgrading of PPE with Site Safety Officer, as necessary, due to changes in exposure levels, monitoring results, weather, other site conditions
- approving all field personnel working on site, taking into consideration their level of safety training, their physical capacity, and their eligibility to wear the protective equipment necessary for their assigned tasks (i.e. respirator fit testing results)
- overseeing the air-monitoring procedures as they are carried out by site personnel for compliance with all company health and safety policies

2.3 Site Safety Officer: Tex Lu, Ph.D.

The Site Safety Officer shall be responsible for the implementation of the site safety plan on site. Specific duties will include:

- monitoring the compliance of field personnel for the routing and proper use of the PPE that has been designated for each task
- routinely inspecting PPE and clothing to ensure that it is in good condition and is being stored and maintained properly
- stopping work on the site or changing work assignments or procedures if any operation threatens the health and safety of workers or the public
- monitoring personnel who enter and exit the site and all controlled access points
- reporting any signs of fatigue, work-related stress, or chemical exposures to the Project Manager and/or Health and Safety Manager within 24 hours
- dismissing field personnel from the site if their actions or negligence endangers themselves, co-workers, or the public and reporting the same to the Project Manager and/or Health and Safety Manager within 24 hours
- reporting accidents or violations of the site safety plan to the Project Manager and/or Health and Safety Manager within 24 hours
- knowing emergency procedures, evacuation routes, and the telephone numbers of the ambulance, local hospital, poison control center, fire and police departments
- ensuring that all project-related personnel have signed the personnel agreement and acknowledgments form contained in this site safety plan
- coordinating upgrading and downgrading of PPE with the Health and Safety Manager, as necessary, due to changes in exposure levels, monitoring results, weather, and other site conditions
- performing air monitoring with approved instruments in accordance with requirements stated in this Site Safety Plan.

2.4 Field Team Leader: Ricky Villarreal

In the event that the Project Manager and the Site Safety Officer are not on the site, the Field Team Leader will assume all responsibility for enforcing safety procedures.

2.5 Field Personnel

All field personnel shall be responsible for acting in compliance with all safety procedures outlined in this site safety plan. Any hazardous work situations or procedures should be reported to the Site Safety officer so that corrective steps can be taken. The Health and Safety Manager and/or Site Safety Officer have the authority to halt any operation that does not follow the provisions of this Site Safety Plan.

3.0 EMERGENCIES

In the event of an accident or emergency situation, immediate action must be taken by the first person to recognize the event. First aid equipment is located on site inside the Subcontractors vehicle. Immediately after emergency procedures are implemented, notify (1) the Site Safety Officer and (2) the Project Manager and the Health and Safety Manager about the situation.

3.1 Emergency Telephone Numbers

Immediate Emergencies:

Local Police: 911
Fire: 911
Ambulance: 911
Medical: 911

Medical Emergency:

Hospital: UC Davis Medical Center
Address: 2315 Stockton Blvd., CA 95817
City: City of Sacramento. (see Attached Map)
Phone: (530) 891-7300

Environmental Emergency:

Risk-Based Decisions, Inc. : (916) 923-0570

Department of Toxic Substances Control: (916) 255-3667
Poison Information Center : 911

3.2 Encountering Hazardous Situations (requiring evacuation)

Personnel encountering a hazardous situation shall **instruct others on site to evacuate the vicinity IMMEDIATELY** and call the (1) Site Safety Officer, (2) the Project Manager, and (3) the Health and Safety Manager for instructions.

The site must not be re-entered until the situation has been corrected (i.e. appropriate back-up help, monitoring equipment, personal protective equipment is at the site).

Usual Procedures for Injury

- A. Call for ambulance/medical assistance if necessary. Notify the receiving hospital of the nature of the physical injury or chemical overexposure. If a telephone is not available, transport the person to the nearest hospital.
- B. Send/take this site safety plan with the attached Material Safety Data Sheet (MSDS), if available, to medical facility with the injured person.
- C. If the injury is minor, proceed to administer first aid.
- D. Notify the Site Safety Officer, Project Manager, and Health and Safety Manager of all accidents, incidents, or near miss situations.

3.3 Emergency Treatment

When transporting an injured person to a hospital, bring this site safety plan to assist medical personnel with diagnosis and treatment. In all cases of chemical overexposure, follow standard procedures as outlined below for poison management, first aid, and if applicable, cardiopulmonary resuscitation. Four different routes of exposure and their respective first aid/poison management procedures are outlined below:

- A. Ingestion: IMMEDIATELY transport the person to the nearest medical facility, or call the poison control center at 911
- B. Inhalation/Confined Space: DO NOT ENTER A CONFINED SPACE TO RESCUE A PERSON WHO HAS BEEN OVERCOME UNLESS PROPERLY EQUIPPED AND A STANDBY PERSON IS PRESENT.
- C. Inhalation/Other: Move the person from the containment environment. Initiate CPR, if necessary, call, or have someone call, for medical assistance. Refer to MSDSD for additional specific information. If necessary, transport the victim to the nearest hospital as soon as possible, see Attached Figure.
- D. Skin Contact: **IMMEDIATELY** wash off skin with a large amount of water. Remove any contaminated clothing and rewash skin. Transport person to a medical facility, if necessary, see attached Figure.
- E. Eyes: Hold eyelids open and rinse the eyes IMMEDIATELY with copious amounts of water for 15 minutes. If possible, have the person remove his/her contact lenses (if worn). Never permit the eyes to be rubbed. Transport the person to a hospital as soon as possible, see attached Figure.

4.0 CHEMICALS OF CONCERN

The following is a list of chemicals known to be present at the subject property and were considered during the preparation of this site safety plan:

- Lead
- Arsenic
- Antimony

The potential for acute toxic effects to field personnel from these compounds at the subject property is considered low. While these chemicals are moderately toxic by acute exposure, chronic exposures to some of these chemicals can result in cancer.

Volatile organic compounds are thought to be a slight threat to human health at the subject property due to the concentrations at which they have been identified.

5.0 HEALTH AND SAFETY REQUIREMENTS

5.1 Work Zone Access

Access within a 20-foot radius of any on-site operation is prohibited to all but field personnel direct involved in the project, personnel of the regulatory agencies, and subcontractors. Standard work practices, such as performing field activities in the upwind position, will be observed whenever possible. All onsite field personnel, including the subcontractor's personnel, will wear personal protective equipment indicated in Section 5.4.

Exclusion Zones

Formal exclusion zones are not expected to be required. The site is fenced and will remain so throughout the planned field activities. Unauthorized personnel will not be permitted near the work zone area.

Decontamination Zone

A decontamination zone will be established near one of the site gates, allowing for easy contamination upon exit from the site. While we do not yet know which gate will be used for exit, this zone will be positioned upwind from the work zone area. Decontamination procedures are covered in Section 5.3. All site personnel will be required to follow the procedures.

Support Zones

No formal requirements will be necessary for the support zone area, although the general practice of locating the zone in the upwind direction will be followed.

5.2 Personal Protective Equipment

Modified Level D is the minimum acceptable level for this site. Modified Level D provides minimal dermal protection. Respiratory protection is optional unless air-monitoring data indicates otherwise.

A Modified Level D includes:

- coveralls/work uniform
- Tyvek (optional)
- Nitrile butyl-rubber or Viton gloves (optional)
- boots/shoes, leather or chemical resistant, with steel shank and approved toe protection
- approved safety glasses or chemical splash goggles if the potential for splash exists
- hard hat
- reflective traffic vest (if traffic, construction, or other related activities are present)
- hearing protection (as appropriate)

B. Additional equipment upgrade:

1. Protocols for upgrading

Once air monitoring data are complete and results are tabulated on the initial site entry, the Site Safety Officer and/or Health and Safety Manager will determine if changes in PPE are needed.

2. Upgraded equipment

a. Respirators

All personnel shall wear respirators with organic vapor cartridges if PID readings exceed 25 units.

b. Other

Tyvek suits and appropriate gloves shall be worn if potential for dermal exposure exists while performing job tasks.

C. First Aid Equipment

Vehicles used for site work will be equipped with a first aid kit and safety equipment may include:

- cones and flags
- barricades
- fire extinguisher
- water, suitable for drinking
- portable eyewash

5.3 Decontamination Procedures

1. All operations conducted at this site have the potential to contaminate field equipment and personal protective equipment (PPE). To prevent the transfer of any contamination to vehicles, administrative areas, and other personnel, the following procedures must be followed:
2. Whenever possible, field equipment should be decontaminated with a solution of Alconox or Green Soap and thoroughly rinsed with water prior to leaving the site. This must be done outside a 5 foot radius of any work area or the hot zone.
3. Disposable PPE (for example, Tyvek suits, respirator cartridges) must be bagged and disposed of at the site.

Personal Decontamination

Level D: Segregated Equipment Drop

- wash/rinse outer boot (as appropriate)
- wash/rinse chemical resistant outer glove, then remove as appropriate
- remove and throw out inner disposable gloves in designated, lined receptacles

Level C: Segregated Equipment Drop

- wash/rinse outer boots
- wash/rinse chemical resistant outer gloves, then remove tape and gloves
- remove chemical resistant suit (remove by rolling down suit from the inside)
- remove outer boots
- remove first pair(s) of disposable gloves

- remove respirator, hard hat/faceshield and properly dispose of cartridges;
- wash respirator
- remove last pair of disposable gloves

Level B: Segregated Equipment Drop

- wash/rinse outer boots
- wash/rinse chemical resistant outer gloves
- cross hotline (into clean area) and change air tanks, then redress or
- cross hotline (into clean area)
- remove boots and gloves
- remove SCBA, if worn over chemical resistant suit
- if SCBA is worn under the suit, remove the chemical resistant suit, then the SCBA
- remove hardhat

5.4 Excavation Procedures

Prior to conducting any excavation operations, Underground Service Alert (USA) will be contacted to ensure underground utilities are located by member companies in the vicinity of the site.

During the excavation operation, the "excavator" will be responsible for the safety of the equipment and must be present at all times. Every attempt must be made to keep unauthorized personnel from entering the work area. If this is not possible, the operation should be shut down until the area is cleared. The Site Safety Officer or the Field Team Leader has the authority and responsibility to shut down the operations whenever a hazardous situation is deemed present.

Excavation equipment should maintain a preferred clearance of 20 feet from any overhead electrical cables, with 10 feet being the minimum. All drilling operations will immediately cease during any hazardous weather conditions.

Hard hats and protective footwear shall be worn at all times.

5.5 Electrical Equipment and Ground Fault Circuit Interrupters

All electrical equipment and power cables used in and around wells or structures containing chemical contamination must be explosion-proof and/or intrinsically-safe and equipped with a three-wire ground lead that has been rated as explosion-proof for hazardous atmospheres (Class 1 Div 1&2). In accordance with OSHA 29 CFR 1926.404, approved ground fault circuit interrupters (GFCI) must be utilized for all 120 volt, single-phase, 15 and 20 amp receptacle outlets on the site that are in use by employees and that are not part of the permanent wiring as defined by the NEC 1987. Receptacles on the ends of the extension cords are not part of the permanent wiring and therefore, must be protected by GFCI's whether or not the extension cord is plugged into permanent wiring.

The GFCI is a fast-acting circuit breaker that senses small imbalances in the circuit caused by current leakage to ground, and in a fraction of a second, shuts off the electricity. However, the GFCI will not protect the employee from line-to-line contact hazards such as a person holding two "hot" wires or a hot and neutral wire in each hand. The GFCI does provide protection against the most common form of electrical hazard -the ground fault. It also provides protection against fires, overheating, and destruction of wire insulation.

GFCI's can be used successfully to reduce electrical hazards on construction sites. Wet connectors and tools, sometimes cause tripping of GFCI's interruption of current flow. It is good practice to limit exposure of connectors and tools to excessive moisture by using watertight or sealable connectors. Providing more GFCI's on shorter circuits can prevent tripping caused by the cumulative leakage from several tools or by leakage from extremely long circuits. (Adapted from OSHA 3007; Ground-Faulting Protection on Construction Sites - 1987.)

5.6 Fire Protection

Only approved containers will be used to transport and store flammable liquids.

All gasoline and diesel-driven engines requiring refueling must be shut down and allowed to cool before filling.

Smoking is not allowed during any operations within the work area in which petroleum products or solvents in free-floating, dissolved or vapor forms, or other flammable liquids may be present.

No open flame or spark is allowed in any area containing petroleum products or other flammable liquids.

5.7 General Health

Medicine and alcohol can increase the effects of exposure to toxic chemicals. Unless specifically approved by a qualified physician, personnel assigned to operations where the potential for absorption, inhalation, or ingestion of toxic substances exists should not take prescription drugs.

Drinking and driving is prohibited at any time. Driving at excessive speeds is always prohibited.

Skin abrasions must be thoroughly protected to prevent chemicals from penetrating the abrasion.

It is recommended that contact lenses not be worn by persons working on the site.

6.0 EMPLOYEE TRAINING

All field personnel with the potential for hazardous exposures are required to participate in an initial minimum of 40 hours of training to recognize, evaluate, and control site hazards, plus three days of supervised field-training. Project manager level and above also participate in an additional eight-hour supervisory training course. Following the initial training, field personnel are required to take part in an annual refresher training session. This may include specific details on the following:

- regulatory requirements
- confined space entry
- respiratory protection
- hazard communication
- decontamination procedures
- incident command system
- first aid/CPR
- air monitoring
- toxicology
- Prop. 65 (California)
- fire technology

7.0 MEDICAL MONITORING PROGRAM

Field personnel are required to have annual medical evaluations.

Additional re-evaluation will be considered in the event of chemical over-exposure while working on this site. The chemicals typical of this site can affect specific organ systems producing characteristic health effects. The medical evaluation would, therefore, focus on the liver, kidney, nervous system, blood systems, and skin and lung function. Laboratory testing will include complete blood count, and applicable kidney and liver function tests. Other tests include skin examination.

8.0 DOCUMENTATION

8.1 Site Safety Plan Agreement

Field personnel have the authority to stop work performed by our subcontractors at this site if any work is not performed in accordance with the requirements of this Site Safety Plan. All project personnel and subcontractor personnel are required to sign the following agreement prior to conducting work at the site.

- A. I have read and fully understand the Site Safety Plan and my individual responsibilities.
- B. I agree to abide by the provisions of the Site Safety Plan.

Name	Company	Date	Signature
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____

8.2 Site Safety Plan Amendment Sheet

Project Name: _____

Project Number: _____

Location: _____

Changes in field activities or hazards:

Proposed Amendment:

Proposed By: _____ Date _____

Approved By: _____ Date _____

Project Manager

_____ Date _____

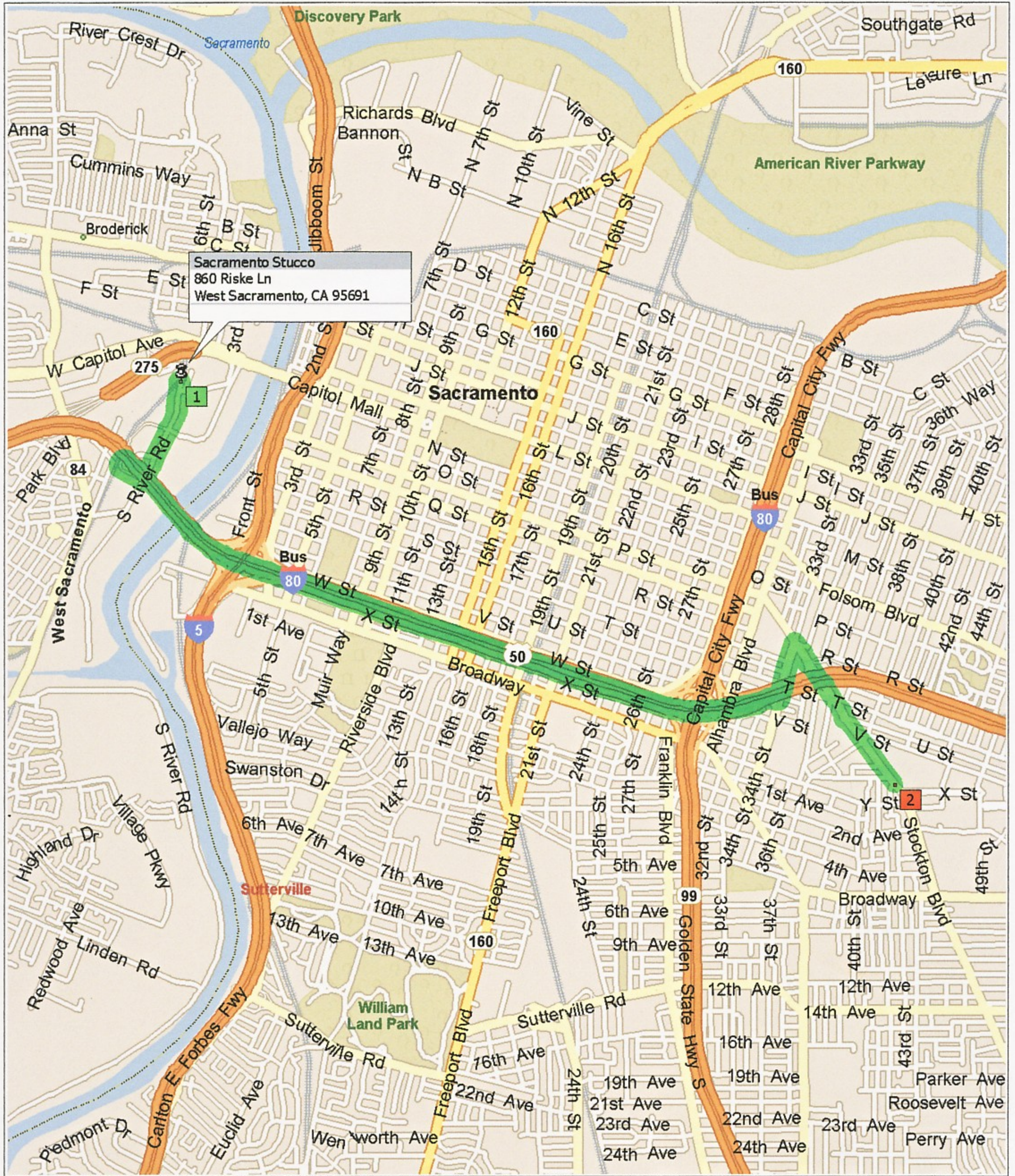
Health & Safety Manager

Declined By: _____ Date _____



Amendment Effective Date _____

Sacramento Stucco to Uc Davis Medical Center

4.9 miles; 6 minutes



0 mi 0.5 1 1.5

9:00 AM	0.0 mi	 Depart Sacramento Stucco [860 Riske Ln, West Sacramento, CA 95691] on Riske Ln (South) for 0.2 mi
9:00 AM	0.2 mi	Keep STRAIGHT onto S River Rd for 0.3 mi
9:01 AM	0.5 mi	Take Ramp (RIGHT) onto I-80 Bus [US-50] for 2.5 mi towards I-80-Br / Sacramento
9:03 AM	3.0 mi	Road name changes to US-50 for 0.6 mi
9:04 AM	3.6 mi	Keep RIGHT onto Ramp for 0.2 mi towards 34th Stre...
9:04 AM	3.8 mi	Turn LEFT (North) onto 34th St for 0.3 mi
9:05 AM	4.1 mi	Turn RIGHT (South-East) onto Stockton Blvd for 0.8 mi
9:06 AM	4.9 mi	 Arrive Uc Davis Medical Center

APPENDIX F

**QUALITY ASSURANCE PROJECT PLAN
SACRAMENTO STUCCO
860 RISKE LANE
WEST SACRAMENTO, YOLO COUNTY, CALIFORNIA**

Prepared For:

Buzz Winchell
860 Riske Lane
West Sacramento, California 95961

Prepared By:

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2033 Howe Avenue, Suite 240
Sacramento, California 95825

September 14, 2007

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FIGURES

Figure 1 Data quality objective for total metals in intralaboratory collocated soil samples.

TABLES

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Table 2	Summary of the data types and uses
Table 3	Quality control criteria.
Table 4	Quality control corrective action
Table 5	Analytes in metals group
Table 6	Data quality objectives for metals in soil

APPENDICES

Appendix A	Environmental Services Used by RBDI
Appendix B	Standard Operating Procedures (SOPs)
Appendix C	Analytical Methods and Detection Limits for the COCs
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1.0 PROJECT MANAGEMENT

1.1 Project Organization

Project Manager - the project manager is Dr. Ijaz S. Jamall, PhD, DABT, REA II, Risk-Based Decisions, Inc.

QA Officer – Walter Hinchman, Alpha Analytical

Field Leader – Tex Lu, Risk-Based Decisions, Inc.

Laboratory Leader – Randy Gardner, Alpha Analytical

Data Processing Leader – James Powers, Risk-Based Decisions

1.2 Problem Definition/Background

Sacramento Stucco is located at 860 Riske Lane and occupies property formerly used as a battery lead reclamation facility. As a consequence, soil at the site is contaminated with lead. Soil sampling was conducted during characterization of the site in anticipation that the property will be sold for redevelopment as a condominium complex. During CAM-17 metal sampling and analysis, an arsenic concentration of unknown origin was detected at the western portion of the site in a location with no lead contamination, and an antimony concentration of unknown origin was detected in the northern portion of the site, alongside lead contamination.

1.3 Project Description

Soil containing lead and antimony will be excavated from beneath the northern portion of the site and removed. The arsenic “hot spot” in the western portion of

the site will be excavated and removed. Soil readings will be taken from the walls and bottom of the excavation pits with a handheld XRF spectrometer to verify removal. All contaminated soil will be removed by transportation offsite to an engineered landfill. Testing may be required for acceptance at a Class II designated waste landfill.

1.4 Data Quality Objectives for Measurement Data

The Project must collect data to support the decisions necessary to meet the end goal of site cleanup. To do this, the data must be of a known and sufficient quality level as required for their intended purpose. Table 3 summarizes the types of data collected by the Project and the intended uses. Table 3 also indicates the data category, either screening or definitive, that is required for each use. These two data categories are associated with specific quality assurance and quality control elements and may be generated using a wide range of analytical methods.

EPA has provided the following definitions:

Definition of Screening Data

Screening data are generated by rapid, less precise methods of analysis with less rigorous sample preparation. Sample preparation steps may be restricted to simple procedures such as dilution with a solvent, instead of elaborate extraction/digestion and cleanup. Screening data provide analyte identification and quantification, although the quantification may be relatively imprecise. At least 10% of the screening data are confirmed using analytical methods and QA/QC procedures and criteria associated with definitive data. Screening data without associated confirmation data are not considered to be data of known quality.

Definition of Definitive Data

Definitive data are generated using rigorous analytical methods, such as approved EPA reference methods. Data are analyte-specific, with confirmation of analyte identity and concentration. Methods produce tangible raw data (e.g., chromatograms, spectra, digital values, etc.) in the form of paper printouts or computer-generated electronic files. Data may be generated at the site or at an offsite location, as long as the QA/QC requirements are satisfied.

For the data to be definitive, either analytical or total measurement error must be determined.

These definitions are easily applied to the chemical analysis data types indicated in Table 3.

When data are received, they are put into one of the two EPA descriptive data categories. The determination is made based on the type of data, how and where the data was generated, and the associated QC data accompanying the data.

Analytical laboratories may send two types of data reports: official and preliminary. The official hardcopy report contains all required information, requested analyses, QC results, and is certified by the laboratory manager. A preliminary report may be verbal, facsimile, or e-mail results usually reported before any peer reviews, confirmation analyses, or QC sample results have been performed. Preliminary results are not certified by the laboratory and may change once the QC and confirmation information are reviewed. Although past history indicates this does not happen frequently, this data must be considered screening data and be used only with the understanding of the potential consequences of making decisions based on inaccurate preliminary results that may be revised in later official results. Laboratories that are not State of California certified or that do not report the extensive QA/QC as required in Section 1.7 should be considered for use as a screening tool only.

Preliminary or screening data are acceptable for decision-making purposes:

- During drilling activities when the cost of waiting for the official results outweigh the potential consequences of using inaccurate or low quality data to make drilling decisions.
- When sample results are used for low cost optimization of existing treatment facilities.
- Treatability studies used to test new technology before implementation (pre-design phase).

Definitive, official validated data must be used for decision making purposes when consequence of failure is high:

- Risk assessment and site characterization samples.
- Self-monitoring compliance samples.
- Proof of system tests performed during initial phase of start-up as required by permit to determine whether system operates and treats as planned.

The EPA has not defined screening or definitive categories for the non-analytical data types collected for RBDI. Therefore, these data collected using RBDI SOPs or standard industry practices (i.e., surveying, physical property analysis) will be considered definitive. Any questions regarding whether data are appropriate for use will be directed to the Project Manager.

1.5 Training Requirements/Certification

Personnel are trained to ensure that they have the skills and knowledge necessary to perform their work assignments in a safe, competent, uniform, and environmentally sound manner. RBDI personnel maintain certification as Registered Environmental Assessors and Registered Geologist. In addition to the regulatory driven training such as hazardous waste operations and emergency response certification (40 hour HAZWOPER), RBDI personnel also

receive on-the-job training for their specific work tasks. All training is tracked and recorded in the office files.

1.6 Documentation and Records

The documentation requirements for RBDI analytical data are defined and communicated to the analytical laboratories via Analytical Services Statement of Work (SOW).

1.6.1. Case Narrative

A case narrative, on subcontractor letterhead, shall include:

- RBDI sample identification and corresponding subcontractor identification.
- Analysis as requested by RBDI on the CoC for each sample and the methodology used.
- Detailed description of all problems encountered.
- Discussion of possible reasons for any QA/QC criteria outside acceptance limits.
- Observations regarding any occurrence that may affect sample integrity or data quality.
- Indication of whether holding times were exceeded.
- Authorization by the subcontractor manager for release of the data.

When any of the hard copy deliverables have been revised, the case narrative shall also indicate why and under whose direction the revision was done, and what changes were made.

1.6.2. Chain-of-Custody Documentation

A legible copy of the completed CoC documentation shall be included as part of the hard copy deliverables. The CoC shall indicate:

- The appropriate receiving and relinquishing signatures and dates.
- The observed sample condition at the time of receipt, described either on the CoC or on the subcontractor's sample receipt form.

1.6.3. Summary of Sample Results

Hard copy reports shall be identical to the electronic report generated from a common data source (see Section 1.6.5 below) and shall include for each sample:

- RBDI's sample identification (ID) and the corresponding subcontractor ID
- Sample matrix
- Date/time and method used for sample extraction, if applicable
- California State, Certification Number, where applicable
- Analysis method
- Date/time of analysis
- ID of the instrument used for analysis
- Dilution or concentration factor of the samples
- Reporting limit as indicated in the SOW
- Definitions for any data qualifiers used
- Analyte name
- Analytical results (concentration or activity detected in the sample) in units as indicated in the SOW
- Analytical chemist's ID
- Sample collection date and date the subcontractor received the sample
- Project CoC ID
- Sample QC batch number
- Analytical uncertainty (error) a the sigma deviating where applicable, in units as indicated in the SOW
- Calculated value where applicable
- Applicable notes or comments

1.6.4. Summary of Quality Control Sample Results

A summary of QC sample results shall be provided for each sample and shall include:

- Method blank results and reporting limits, matrix, units, batch number, date/time of analysis, instrument ID number, analyst ID, and method code
- Surrogate or tracer yield recoveries, if applicable
- Sample duplicate results, and relative percent difference (%RPD), if applicable
- Matrix spike (MS), matrix spike duplicate (MSD) recoveries and %RPDs, batch number, date/time of analysis, instrument ID number, analyst ID, matrix, method code, and sample result when indicated by the method
- Laboratory control sample (LCS) recoveries, batch number, date/time of analysis, instrument ID, analyst ID, matrix, and method code
- QC control limits for LCS, MS/MSD, surrogate, and tracer yield recoveries, and %RPDs

In addition, the Subcontractor shall provide upon request all supporting documentation used to generate reported results, including, but not limited to:

- Initial instrument calibration data
- Continuing calibration data
- Retention time window determinations
- Run logs and standard preparation logs
- Method detection limit determinations.
- Laboratory QC control charts
- Gas chromatography/mass spectrophotometry (GC/MS) tune data

Data packages will be validated at RBDI. For results that cannot be validated through the standard report package, the subcontractor shall submit additional related documentation, such as raw data, to RBDI upon request.

1.6.5. Hard Copy Retention

All raw sample and QC hard copy data are considered QA records and must be maintained for the life of RBDI. The subcontractor shall retain all related project information for a minimum of three years.

1.6.6. Electronic Data Deliverables

There is no electronic data deliverable (GeoTracker) requirement on this project.

1.6.7. Turnaround Times

Turnaround time (TAT) is calculated beginning at 24 hours after RBDI's notification for sample pickup or the verified time of sample receipt at the lab facility, whichever comes first. If samples are shipped, the TAT calculation starts 24 hours after the samples leave the RBDI facility or the verified time of sample receipt at the lab facility, whichever comes first. Sample pickup commences the count for 24-hour or less TAT.

The TATs for official hard copy data packages and preliminary results are specified in the agreement/contract between RBDI and the subcontractor. The official hard copy result includes the sample results with the subcontractor's signature and accompanying QA/QC results. The turnaround times for preliminary/unofficial packages are the schedules when RBDI must receive preliminary results by fax, e-mail, or verbally, as requested on the CoC. Only receipt of the official report shall constitute the basis for payment. TATs are defined in working days.

2.0 MEASUREMENT/DATA ACQUISITION

2.1 Sampling Process Design

Presently, the investigation at Sacramento Stucco requires the sampling and analysis of metals in soil using methods and procedures functionally equivalent to the methods and procedures used in the EPA Contract Laboratory Program (CLP) and the California DTSC Certified Laboratory Program whenever possible.

The specific locations and frequency of soil sampling are determined by the Task Leader. The analytical methods used for soil samples are selected on the basis of: (1) results of analysis of soil from nearby boreholes; and (2) data on the use, storage, and disposal of hazardous material at nearby locations. A soil sampling plan for each borehole or excavation is developed prior to collection of the samples.

All sampling plans are reviewed by the Project Manager for inclusion of proper QA/QC samples and are archived by RBDI.

2.2. Sampling Methods Requirements

The RBDI SOPs describe how RBDI collects samples in support of projects. The RBDI SOPs applicable to sampling are:

SOP-1.1 Field Borehole Logging

SOP-1.2 Borehole Sampling of Unconsolidated Sediments and Rock

SOP-1.8 Disposal of Investigation-Derived Wastes (Drill Cuttings, Core Samples, and Drilling Mud)

SOP-1.12 Surface Soil Sampling

SOP-1.15 Well Site Core Handling

SOP-4.1 General Instructions for Field Personnel

SOP-4.2 Sample Control and Documentation

SOP-4.3 Sample Containers and Preservation

SOP-4.4 Guide to the Handling, Packaging, and Shipping of Samples

SOP-4.5 General Equipment Decontamination

SOP-4.8 Calibration/Verification and Maintenance of Measuring and Test Equipment (M&TE).

SOP-4.9 Collection of Field QC Samples

A complete list of RBDI SOPs can be found in Appendix B. The SOP manual as a whole undergoes an annual review. Procedures are revised whenever a procedural change is needed; therefore, reviews and revisions may occur more frequently.

Sampling performed by RBDI personnel in support of remedial activities follow the RBDI SOPs when applicable to the work being performed. O&M Manuals for the RBDI treatment facilities are used in conjunction with the RBDI SOPs.

The O&M manuals are reviewed annually and revised when necessary.

2.3. Sample Handling and Custody Requirements

Sample custody procedures are described in RBDI SOP 4.2, "Sample Control and Documentation." This SOP describes the methodology of sample control and documentation applicable to field logbooks, sampling data collection forms, CoC records, and sample identification labels. RBDI SOP 4.3, "Sample Containers and Preservation," contains holding time information, as well as the appropriate sample volume, container, and preservation techniques. Additional sample handling and shipping information can be found in RBDI SOP 4.4, "Guide to the Handling, Packaging, and Shipping of Samples."

2.4. Analytical Methods Requirements

RBDI submits environmental samples produced during environmental investigations and remedial activities to onsite and offsite (subcontract) analytical laboratories for analyses. RBDI requires EPA-based methodology whenever possible. RBDI requires that any of its subcontractor analytical laboratories and any approved sub-subcontractors maintain a DHS Environmental Laboratory Accreditation Program (ELAP) certification for analytical tests provided to RBDI for which the DHS offers certification. During the contract pre-award audit, copies of State and Federal certificates and any analytical procedures to be used by the subcontract laboratories are reviewed. In addition, all relevant method detection limit (MDL) studies are reviewed to verify that the laboratories performance-based MDLs are as low or lower than the required RBDI reporting limits (See Section 3.1.1 for more information on analytical laboratory audits). RBDI does not accept results from a laboratory that have MDLs higher than the reporting limits.

MDL studies are performed by analyzing seven replicates (40 CFR, part 136 Appendix B). RBDI maintains copies of the certificates, MDL studies, and subcontract analytical laboratories operating procedures.

The requested analyses are selected based on the COC. RBDI requires reporting limits lower than the action limits for the COCs whenever technically feasible. Appendix C lists the analytical methods and reporting limits required for RBDI COCs. This list is continually being modified as alternative methodology and technology is introduced. The reporting limits are subject to change due to high analyte concentrations and matrix effects requiring dilution.

The analyses performed by onsite laboratories for RBDI are either nonstandard analyses or non-critical (information only) samples that require a rapid turnaround time. All critical samples requiring standard methodology are sent offsite to a DHS certified laboratory.

2.5. Field/Analytical Quality Control Requirements

There are many measures that need be taken to ensure the quality of the sampling and analysis effort. The QC checks that RBDI has implemented are the collection of equipment blanks to check the effectiveness of decontamination procedures, trip blanks and field blanks which identify contamination that occurs during sample collection and transportation, and the collection of collocated samples. Five percent of RBDI samples will be collocated. When collocated samples are collected, processed, and analyzed by the same organization, they provide intra-laboratory precision information for the entire measurement system including sample acquisition, homogeneity, handling, shipping, storage, preparation and analysis. When collected, processed, and analyzed by different organizations, these QC checks provide inter-laboratory precision information for the entire measurement system. Additional information regarding these types of QC checks including QC sample collection frequency can be found in RBDI SOP 4.9, "Collection of Field QC Samples."

The analytical laboratories that analyze samples for RBDI are required to perform and document certain internal QC checks. These checks will vary according to the specific analytical method and level of desired data quality. For a high-quality result, the QC usually consists of the analysis of one method blank, MS and MSD or sample duplicate, and an LCS per batch of twenty samples. In addition, initial instrument calibration data, continuing calibration data, extraction blank data, surrogate recoveries, retention time windows, method detection limit determinations, laboratory QC control charts, and GC/MS tune data may also be reported. At a minimum, these items are kept at the laboratory and reviewed upon request or during an audit of the analytical laboratory facilities. Analytical QC checks required by RBDI are explained in RBDI SOP 4.6, "Validation and Verification of Data Generated by Analytical Laboratories. Assessment of the analytical QC is described in Chapter 3. Table 4 shows the methods used to analyze the COCs, the QC elements, frequency of analysis, and acceptance criteria. The analytical laboratories set internal QC limits based on EPA methodology whenever it exists. These limits may be tighter or wider than the criteria listed in Table 4; therefore, the QC Chemists base their data review and

qualification of data on the internal control limits provided by the laboratories. Table 5 lists the corrective action for QC failure.

2.6 Instrumentation/Equipment Testing, Inspection, and Maintenance

RBDI field instruments are maintained as directed by the manufacturer. The maintenance procedures and required documentation are described in RBDI SOP 4.8, "Calibration/Verification and Maintenance of Measuring and Test Equipment (M&TE)."

The subcontract analytical laboratories have internal procedures that describe the maintenance and corrective actions performed for analytical instrumentation.

2.7 Inspection/Acceptance Requirements for Supplies

All supplies and consumables required are procured by RBDI. RBDI personnel order the materials or equipment and specify the technical and quality requirements. When the order is received, RBDI personnel determine if the item meets the specified requirements. The graded approach is used to determine the level of testing required.

2.8 Data Acquisition Requirements

Data from non-measurement sources, such as literature files, and computer databases and programs, are essential elements of project implementation and decision making. Use of these data are managed in accordance with the policy presented in this section.

The need to assemble pertinent information previously developed by others will be determined. This is typically considered during the task planning stages. The scope of any resulting survey will be based on the needs of the project. Acquired information may include:

- Applicable Federal, State, and local regulations and rulings
- Program/site status
- History/background
- Future plans
- Requirements/schedule
- Methodologies available for field exploration, monitoring, testing, and sampling
- Laboratory testing
- Processing and volume reduction of hazardous material
- Isolation and disposal of hazardous material
- Numerical analysis and design
- Existing data generated for the specific region or site
- Demographical
- Geological (surface and subsurface)
- Hydrological/meteorological (e.g., ground water distribution and usage)
- Geochemical
- Geophysical
- Geotechnical
- Facility development and practices (past, present, and future)
- Type, volume, and extent of contamination
- Physical layout of man-made facilities
- Data generated on specific wastes, materials, or chemical compounds of interest
- Processing
- Physical
- Chemical
- Mechanical
- Thermomechanical
- Toxicity/hazards and protection
- Treatability
- Previous or concurrent surveys, studies, analyses, and designs of a similar or parallel nature.

Sources for the above information may include:

- Government and private regulations, standards, guidelines, journals, periodicals, and data compilations
- Textbooks and maps
- Reports and manuals previously issued by EPA, DTSC, the Regional Water Quality Control Board or other organizations
- Results of currently ongoing investigations by government and private agencies, corporations, and research facilities
- Personal communications
- Aerial orthophotographs and satellite imagery

Information collected will be documented to indicate its source. Documentation will, as appropriate, include author or individual contacted; source title; identification of periodical or journal; standard, guideline, or report number; identification of publisher or originating organization; page location; and date. Documentation must be sufficient to allow other individuals to easily obtain or verify the information.

Whenever possible, complete copies of articles, data compilations, maps, reports, and photographs will be included in the project files. If this is not feasible, copies of title pages and pertinent sections should be included with complete source documentation. Regulations, standards, guidelines, and textbooks, which are generally not project specific, may be obtained and kept in the project library if they are of a unique nature.

Personal communications, such as interviews or correspondence, will be documented in the form of trip reports, meeting notes, or memoranda, and the resulting documentation included in the project files. Documentation will provide, as appropriate, the date and the name, organization, address, telephone number, and credentials of individuals contacted. A request should be made for formal written confirmation of critical data obtained verbally to serve as final documentation.

As necessary, an estimation of the quality/credibility of the information will be made. The collection of information must be consistent with the quality objectives of the project. Particular attention should be given to information that is collected that is not published from a peer-reviewed source, or collected under the controls of a documented quality assurance program.

This may include, but is not limited to, personal interviews, internal reports and memoranda, or newspaper articles. Any limitations or potential reservations for the accuracy or credibility of acquired information that could affect project quality should be clearly identified.

Computer software documentation, such as reference manuals and users' guides, are maintained and easily accessible to users.

Quality assurance (QA) in data interpretation and software application consists of using appropriate data, data analysis and methods, and administrative procedures.

To ensure consistent and reproducible results, QA in software application should address the following issues (van der Heijde et al., 1988):

- Formulation of problems
- Definition of objectives
- Methodologies and procedures
- Conceptualization of physical system and processes
- Description of assumptions, simplifications, and limitations
- Data acquisition, interpretation, and uncertainties
- Software selected and applied
- Validity of parameter values, and protocols for estimations, interpolations, and calibration
- Sensitivity analyses
- Validation of results
- Establishment of appropriate performance targets
- Presentation and documentation of results

- Evaluation and applicability of results
- Assessment and technical review

The findings of technical and/or administrative reviews should be documented and distributed to all members of technical staff. If necessary, additional work or corrective action in response to review comments should also be documented.

3.0 ASSESSMENT/OVERSIGHT

3.1. Assessments and Response Actions

3.1.1. System Audits

The system audit consists of evaluation of all components of the measurement systems to determine their proper selection and use. This audit includes a careful evaluation of both field and laboratory QC procedures and is regularly scheduled for the lifetime of the projects.

RBDI performs self-assessments of quality-affecting activities including sampling, data management, drilling, and operations.

RBDI requires that the operations and QA program of the laboratories that provide analytical services in support of RBDI be reviewed before contract award, then annually thereafter.

This review is usually an onsite audit using checklists developed based on EPA SW-846 requirements, good laboratory practices and any contractual agreements between RBDI and the laboratory. A laboratory audit includes:

- Analysis
- Assessments
- Calibration
- Client services
- Computer files
- Corrective action and reporting
- Data validation and reporting
- Document control
- Glassware
- Instrumentation
- Laboratory notebooks

- Maintenance
- MDL studies
- QA program and documentation
- Reagents
- Record archival
- Sample control
- Sample login and distribution
- Sample preparation
- Segregation
- Standard operating procedures
- Standard preparation
- Subcontracting
- Training
- Waste storage and disposal

3.1.2. Performance Audits

Performance audits are conducted periodically to determine the accuracy of the total measurement system. RBDI conducts performance audits by requiring the collection of field QC samples and the analysis of performance evaluation samples.

Performance evaluation (PE) samples are used to monitor analytical laboratory performance and data quality. RBDI requires that any subcontractor analytical laboratories participate, as applicable, in California and/or EPA-approved inter-laboratory QA programs. Subcontractors and any sub-subcontractors provide RBDI with:

- The unique laboratory identification codes for each approved inter-laboratory comparison program in which the subcontractor and sub-subcontractors participate.
- A hard copy report of the results of each inter-laboratory comparison study within 30 calendar days of its publication.

- A written explanation for any unacceptable results identified by the inter-comparison programs within 30 calendar days of the publication of the results. The explanation must include a determination of the root cause and a schedule of corrective action to be taken to resolve the problem and prevent its recurrence.
- Names and phone numbers, upon request, of agency contacts for all PE studies, so that RBDI may contact them for verification of report accuracy when required.
- Copies of correspondence sent to any state or federal Performance Evaluation program due to unsatisfactory performance.

In addition, RBDI conducts certified double-blind performance evaluation sample programs for each of the laboratories utilized by RBDI. The frequency, matrix, and methodology for the PE samples vary based on need and available budget. RBDI informs the laboratories of any non-performance and requests corrective action. All subcontract analytical laboratories must perform adequate analysis of pre-award double blind PE samples.

To evaluate the quality of the sampling and analysis effort, RBDI has implemented the following QC checks: equipment blanks, field blanks, trip blanks, and collocated samples as described in Section 2.5.1. The collocated samples are evaluated as described in Section 4.2.

The blank samples are evaluated per SOP 4.6 and SOP 4.11.

3.1.3. Data Quality Assessment

Analytical laboratories are required to assess the quality of their data using such methods as QC sample analysis, control charting, internal PE samples, and analyst proficiency testing. RBDI uses equipment blanks, field blanks, trip blanks, collocated samples, and all the supporting analytical data (as described in Section 1.6) provided by the analytical laboratories to assess data quality.

3.1.3.1. Accuracy

The analytical laboratories analyze QC samples to assess precision and accuracy. Accuracy is defined by the degree of agreement between measured value and true or known value. It is a measure of the bias in the measurement system. The laboratories assess accuracy, expressed as %RCV, by the analysis of MSs and LCSs. The %RCV is compared to set control limits to determine acceptability. The %RCV is calculated as follows:

$$\%RCV = (\tilde{A} B) / T \times 100$$

where:

A = Concentration actually determined in matrix spiked sample.

B = Concentration determined on original un-spiked sample.

T = True concentration of the spike in the spiked sample.

3.1.3.2. Precision

Precision is determined by the degree of agreement between duplicate analyses of the same parameter in a given sample. It is an indicator of how well a laboratory can reproduce its work under a given set of conditions. Precision is expressed as %RPD and is determined by the laboratory by the analysis of MSDs, sample duplicates, or LCS duplicates. The %RPD is compared to set control limits to determine acceptability. RBDI also assesses precision by the analysis of intralaboratory and interlaboratory collocated samples. The %RPD is calculated as follows:

$$\%RPD = | R1 - R2 | / (R1 + R2) / 2 \times 100$$

where:

R1 = Measured analyte concentration in first aliquot or sample.

R2 = Measured analyte concentration in second aliquot or sample duplicate.

Another way to assess precision is by calculating the percent relative standard deviation (%RSD). The %RSD is calculated as follows:

$$\%RSD = \{ 100 / \text{SQRT}(2) \} \times [(2 \times | R1 - R2 |) / (R1 + R2)]$$

where:

R1 and R2 = The reported concentrations for each duplicate sample.

The %RPD of laboratory-generated duplicates is compared to the laboratory specific control limits. The %RPD of collocated samples is compared to the QA Objectives for measurement data as defined in Chapter 4 to determine if the Projects have been receiving data of the appropriate quality.

3.1.3.3. Completeness

The RBDI QA Report will summarize completeness by determining the completeness of the data set in terms of the number of valid results obtained for the number of analyses planned.

It will be calculated by counting the number of routine ground water analyses planned (SP), the number actual sampled (AS), the analyses received back from the laboratories (R), and those analyses that are valid and usable (V).

In theory, we will collect less samples than planned due to well dry outs or logistic problems (SP>AS). The number of samples received back from the laboratories may be less than actually collected due to sample breakage in shipment or other sample losses (AS>R). Finally, it is expected that some results received will not be usable due to laboratory problems or QC sample failure (R>V). Completeness will be based on RBDI COCs.

Completeness equation:

$$\text{Completeness} = V/SP \times 100$$

V = Valid, usable results.

SP = Samples planned.

RBDIs completeness objective is 90%. If completeness is not met, additional samples will be collected.

3.1.3.4. Representativeness

Representativeness is a measure of the degree to which data accurately and precisely represent a characteristic of a population parameter at a sampling point or for a process condition or environmental condition. Representativeness is a qualitative term that determines whether in situ and other measurements are made and physical samples collected in such a manner that the resulting data appropriately reflect the media and phenomenon measured or studied. RBDI uses various models to select monitoring locations. In addition, RBDI uses sampling techniques and EPA prescribed sample preservation to ensure that the samples are representative of the media of interest.

3.1.3.5. Comparability

Comparability is the measure of the confidence with which one data set or method can be compared to another. RBDI ensures comparability by performing periodic statistical analyses on all the data in the database to identify outliers. RBDI reviews the recommended outlier identification and accepts or rejects it based on professional judgment (i.e., does the outlier fit the model?). An outlier is defined as "an observation that does not conform to the pattern established by other observations." Outliers may arise from mistakes such as transcription, keypunch, or data coding errors. They may also arise as a result of instrument breakdowns, calibration problems, or carry-over from prior analyses. In addition,

outliers may be manifestations of a greater amount of inherent spatial or temporal variability than expected for a given value. Outliers may also be an indication of unsuspected factors of practical importance.

3.2. Quality Assurance Reports

This report will summarize the performance of QA/QC measures and data quality for sampling and analysis activities, for the year as reported by the analytical laboratories. The report will review laboratory performance for the analysis of method, trip, equipment, and field blanks, collocated samples, LCSs, MS, MSDs, and sample duplicates.

Performance of QA/QC measures are reported in terms of precision as %RPD, accuracy as %RCV, and completeness. In addition, the report will summarize the Data Qualifier Flags used to qualify RBDI data, any documented non-conformances, results of any self-assessments, analytical laboratory performance evaluations, independent audits, and laboratory audits.

4.0 DATA VALIDATION AND USABILITY

4.1 Data Review, Validation, and Verification

RBDI reviews 100% of the analytical results immediately upon receipt from the analytical laboratories. During this review, RBDI verifies that the analytical laboratories internal QC data is within acceptance limits, blanks are clean, dilutions, units and reporting limits are correct. RBDI reviews the analytical results against historical information when this information exists. RBDI data validation procedures, RBDI SOP 4.6 and SOP 4.11, were prepared using the EPA's Functional Guidelines (U.S. EPA, 1985; 1994c,d). The offsite commercial laboratories are contractually required to provide method blank, laboratory control sample, matrix spike, and matrix spike or sample duplicate results with every analysis. The acceptance limits used are the analytical laboratories' internal control limits.

RBDI initiates Data Qualifier Flags for analytical data that is suspect, outside acceptance criteria, or requires additional qualification (see Appendix D for a list of Data Qualifier Flags and some general rules for use). The analytical sample results are qualified based on the associated QC data and other information that accompany the results. All data are identified in the database as either screening or definitive data as described in Chapter 1 of this report. RBDI works with the laboratories to identify and correct any problems with data or service.

Calibration information is made available upon the request. As described in Chapter 2, the analytical laboratories archive all calibration, QC, and raw data. RBDI performs an annual evaluation of all QA/QC data, including calibration information and raw data validation on representative data packages. The number of data packages reviewed is determined based on analytical laboratory performance. This data is also reviewed during the annual assessment of the analytical laboratories as described in Chapter 3.

4.2 Reconciliation with User Requirements

Once the data has been reviewed, qualified and stored electronically, it is ready for use by the end user. The end users of the data must specify the types and quality of data they need extracted from the database for their intended purpose. RBDI will then exclude those data that do not meet the stated criteria. Data that should be excluded from uses requiring a high level of quality and confidence, for example, may include data that has exceeded its hold time, identified as a statistical outlier, flagged with an “S,” “J,” or “R” qualifier flag, or is screening data. The end user will evaluate whether they are of sufficient quality and quantity to support decisions to meet the RBDI’s remedial strategies. If there is any question whether the data quality is sufficient for a specific use, the project manager will be consulted.

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Table 2. Livermore Site Environmental Restoration Project's Contaminants of Concern (COC) and action limits in ground water.

CAM-17 metals

<i>Contaminant of Concern</i>	<i>Detection Limit (mg/kg)</i>
Mercury	0.2
Antimony	1.0
Arsenic	1.0
Barium	2.0
Beryllium	1.0
Cadmium	1.0
Chromium	1.0
Cobalt	1.0
Copper	2.0
Lead	1.0
Molybdenum	1.0
Nickel	1.0
Selenium	1.0
Silver	1.0
Thallium	1.0
Vanadium	10
Zinc	20

Table 3. Summary of RBDI's data types and uses.

Data types	Data Uses				
	Site Characterization	Risk Assessment	Evaluation of Alternatives	Engineering Design of Alternatives	Monitoring During Remedial Action
Chemical and radiological analysis					
Groundwater samples	D	D	D	D	D
Surface water samples	D/S ^a	D	D	D	D
Soil samples	D	D	D	D	D
Air Samples	D	D	D	D	D
Soil Vapor	D/S ^b	D	D	D	D
Well Installation					
Well Location	D	D	D	D	D
Screened Depth	D	--	D	D	D
Screened Interval	D	--	--	D	D
Meteorological					
Windspeed & direction	--	S	S	S	S
Barometric Pressure	--	S	S	S	S
Precipitation	--	S	S	S	S
Air temperature	--	S	S	S	S
Geologic					
Lithological Logs	D	--	--	D	--
Geophysical Logs	D	--	--	D	--
Hydraulic/Hydrogeologic					
Ground water elevation	D	D	D	D	D
Well discharge rate	D	D	D	D	D
Aquifer characteristics ^c	D	D	D	D	D
Process Control/Self monitoring					
Flowrates	D	--	D	D	D
Process samples	--	--	D	D	D
Temperature	--	--	S	S	S
Numeric Modeling					
Model Outputs	D	D	D	D	D
Physical Properties^d					
Soil samples	D	D	D	D	D

Notes:

D = Definitive data.

S = Screening data.

a Screening data may be used when drilling operations require rapid decisions.

b Soil vapor data may be definitive or screening based on the method used. Both are acceptable.

c Transmissivity, storage coefficient, hydraulic conductivity, porosity.

d Sorption constant (*K_d*), cation exchange capacity, bulk density, soil moisture content, grainsize, porosity.

Table 4. Quality control criteria.

<i>Method</i>	<i>QC Element</i>	<i>Frequency</i>	<i>Acceptance Criteria</i>
Mod. 8015	Method Blank	1 per batch	<PQL
	Matrix Spike %R	1 per batch	60-140%
	Matrix Spike Dup %RPD	1 per batch	30%
	Laboratory Control Sample %R	1 per batch	60-140%
6010	Method Blank	1 per batch	<PQL
	Matrix Spike %R	1 per batch	70-130%
	Matrix Spike Dup %RPD	1 per batch	30%
	Laboratory Control Sample %R	1 per batch	70-130%
8260	Method Blank	1 per batch	<PQL
	Matrix Spike %R	1 per batch	60-140%
	Matrix Spike Dup %RPD	1 per batch	30%
	Laboratory Control Sample %R	1 per batch	60-140%

Table 5. Quality control corrective action.

QC Sample Type	QC Failure Corrective Action
Organic analysis	
Method Blanks	Follow method specified actions if analytes are detected in the method blank.
Matrix Spikes	If % recovery is outside of control limits, perform method specific corrective actions.
Matrix Spike Duplicates	If % relative percent difference is outside of control limits perform method specific corrective actions.
Laboratory Control Samples	If % recovery is outside control limits, reanalyze sample batch.
Surrogates	If % recovery is < lower acceptance limit, reanalyze sample.
Inorganic analysis	
Method Blanks	If analytes are detected in the method blank; no analyte detections are acceptable, redigest/reanalyze samples.
Matrix Spikes	If % recovery <30%, perform a post-digestion spike on samples to check for matrix interferences.
Matrix Spike Duplicates	If % relative percent difference is outside of control limits perform method specific corrective actions.
Laboratory Control Samples	If % recovery is outside control limits, reanalyze sample batch.
Radiological analysis	
Method Blanks	Follow method specified corrective actions if analytes are detected in the method blank above sample MDA.
Matrix Spikes	If % recovery is outside of control limits perform method specific corrective actions.
Matrix Spike Duplicates	If relative percent difference is outside of control limits, perform method specific corrective actions.
Laboratory Control Samples	If % recovery is outside control limits, reanalyze sample batch.
Tracer yields	If % recovery is < lower acceptance limit, reanalyze sample.

Note:

MDA = Minimum detectable activity.

Appendix A

Environmental Services Used by RBDI

Appendix A

Environmental Services Used by RBDI

Air Toxics Ltd.
Alpha Analytical
Avalex Engineering
Calgon Carbon
Cascade Drilling
KJB Management Services, Alarcon Bohm
PSC
URS
Wasatch Environmental
Waters Excavation
Western Strata Exploration (Westex) Drilling

Appendix B

Table of Contents for RBDI

Standard Operating Procedures (SOPs)

Appendix B

Table of Contents for RBDI

Standard Operating Procedures (SOPs)

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Appendix C

Analytical Methods and Detection Limits for the RBDI COCs

Appendix C

Analytical Methods and Detection Limits for the RBDI COCs

COC	Description of Analysis	Method	Sample Matrix	Reporting Limit (mg/kg)
Lead	AA, Furnace or ICP-MS?		soil	
Arsenic	AA, Furnace		soil	
Asbestos	Polarizing Light Microscope (PLM)	CARB 435	soil	
Asbestos	Transmission Electron Micro. (TEM)		soil	
Metals	CAM-1 7		soil	
Mercury	ICP-MS	6010	soil	
Antimony	ICP-MS	6010	soil	
Arsenic	ICP-MS	6010	soil	
Barium	ICP-MS	6010	soil	
Beryllium	ICP-MS	6010	soil	
Cadmium	ICP-MS	6010	soil	
Chromium	ICP-MS	6010	soil	
Cobalt	ICP-MS	6010	soil	
Copper	ICP-MS	6010	soil	
Lead	ICP-MS	6010	soil	
Molybdenum	ICP-MS	6010	soil	
Nickel	ICP-MS	6010	soil	
Selenium	ICP-MS	6010	soil	
Silver	ICP-MS	6010	soil	
Thallium	ICP-MS	6010	soil	
Vanadium	ICP-MS	6010	soil	
Zinc	ICP-MS	6010	soil	

Appendix D Qualifier Flags

Appendix D Qualifier Flags

Flag	Definition	Identity?	Conc?
B	Analyte found in method blank	no	yes
D ^a	Analysis performed at a secondary dilution or concentration (i.e. vapor samples).	no	no
F	Analyte found in field blank, trip blank, or equipment blank	no	yes
G	Quantitated using fuel calibration, but does not match typical fuel fingerprint (fuel maybe gasoline, diesel, motor oil etc.).	yes	yes
H ^a	Sample analyzed outside of holding time, sample results should be evaluated.	no	yes
I	Surrogate recoveries were outside of QC limits.	no	yes
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	no	yes
L	Spike accuracy not within control limits.	No action is taken by data user on the MS/MSD data alone	
O	Duplicate spike or sample precision not within control limits.		
P	Indicates that the absence of a data qualifier flag does not mean that the data does not need qualification, but that the implementation of electronic data qualifier flags was not yet established.		
R	Sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be verified.		
S	The analytical results from this sample are suspect. Supply reasoning on form.	yes	yes
T	Analyte is tentatively identified compound; result is approximate.	yes	yes
U ^a	Compound was analyzed for, but not detected above the detection limit.	yes	yes

^a Automatically flagged in the database by the data qualifier flag program.

D-1. Some General Rules for Appying QA Flags

Blanks

If analytes are found in the method, field, equipment, or trip blank, flag positive sample results only. Sample non-detects do not need flagging.

Surrogates

When surrogate recoveries are below the lower control limit (LCL), associated nondetect (ND) sample results should be flagged "IR" and positive results should be flagged "IJ". The "R" flag is for rejection of the sample results and the "J" flag indicates an estimated concentration.

When surrogate recoveries are above the upper control limit (UCL), the positive sample results should be flagged "IJ" (NDs do not require flagging). When QC sample surrogates are out of control, all supporting information (i.e. MS/MSD accuracy and precision, LCS accuracy, and sample location historical data) should be considered to determine if the associated samples were affected.

Laboratory Control Samples

If the LCS %R is greater than %R upper control limit (UCL) for an analyte, check to see if the analyte is detected in the sample from the same batch number, if it is positive, qualify the data as being positively identified, but value is approximate ("J"). If the analyte is ND, no flag is necessary. If the LCS %R is less than %R lower control limit (LCL) for an analyte, check to see if the analyte is detected in the sample from the same batch number, if it is positive, qualify the data as being positively identified, but value is approximate ("J") and the associated non-detected compound(s) should be qualified as "R" meaning sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be verified. Also, if more than half of the compounds in the LCS are not within the required recovery criteria, then all associated data should be qualified "R".

Matrix Spikes

If the MS %R is out of control (either above the UCL or below the LCL) for an analyte, but the MSD %R is within limits, no flag is necessary. If the MSD %R is out of control for an analyte, but the MS %R is within limits, no flag is necessary. If both the MS and MSD %R are out of control, qualify the associated sample results (both positive and negative detections) in the database ("L"). If the %RPD is out of control (either above the UCL or below the LCL) for an analyte, qualify the associated sample results (both positive and negative detections) in the database ("O"). Both positive and non-detect sample results should be flagged when the MS/MSD recoveries or precision are out of control.

Continuing Calibration Verification

Use professional judgement when qualifying data based on CCVs. The following IF, THEN statements are provided as a guide only:

IF recovery is <LCL and sample result is ND, THEN flag with a "J".

IF recovery is >UCL and sample result is ND, THEN no flag is needed.

IF recovery is <LCL and sample result is positive, THEN flag with a "J".

IF recovery is >UCL and sample result is positive, THEN flag with a "J".

IF recovery is <LCL and sample result is ND and other QC failed, THEN flag with a "R".

Acronyms and Abbreviations

Acronyms and Abbreviations

ARAR Applicable or Relevant and
Appropriate Requirement
NSIAQMD Northern Sierra Area Air Quality
Management District
CoC chain-of-custody
cm centimeter(s)
DQO data quality objective
DTSC Department of Toxic
Substances Control
EDD electronic data deliverables
EE/CA Engineering and Evaluation/
Cost Analysis
ELAP Environmental Laboratory
Accreditation Program
EPA Environmental Protection
Agency
ES&H Environmental Safety & Health
GC gas chromatograph
ID identification
K_d sorption constant
km kilometer(s)
µg/L micrograms per liter
LCS laboratory control sample
LIMS Laboratory Information
Management Systems
M&TE Measuring and Testing
Equipment
MCL Maximum Contaminant Level
MS matrix spike
MSD matrix spike duplicates
O&M operations and maintenance
OSHA Occupational Safety and Health
Administration
PE performance evaluation
PP Proposed Plan
ppb parts per billion
ppm parts per million
QA quality assurance
QAE Quality Assurance Engineer
QAPP Quality Assurance Project Plan

QC quality control
RAW Remedial Action Workplan
%RCV percent recovery
RD Remedial Design
RI Remedial Investigation
%RPD relative percent differences
%RSD percent relative standard deviation
SC Sampling Coordinator
SOP Standard Operating Procedure
SQA software quality assurance
SSP Site Safety Plan
TAT turnaround time
VOC volatile organic compound

APPENDIX G

**TRANSPORTATION PLAN
SACRAMENTO STUCCO
860 RISKE LANE
WEST SACRAMENTO, YOLO COUNTY, CALIFORNIA**

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September 14, 2007

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1.0 BACKGROUND

Sacramento Stucco is located at 860 Riske Lane, West Sacramento in Yolo County, California ([Figure 1](#)). The facility was built on land formerly utilized by a battery recycling facility. The site is currently regulated by the California Department of Toxic Substances Control under the Voluntary Cleanup Program (Site ID 60000284). The site was cleaned under California Department of Health Services oversight in the early 1980s to the 1,000 mg/Kg lead standard applicable at the time for industrial property. The site is being redeveloped for residential use to a current standard of 150 mg/Kg lead.

A removal action is planned. Lead-contaminated soil will be excavated, transported and disposed at an appropriate designated waste or hazardous waste landfill.

2.0 PURPOSE AND OBJECTIVE

There are three primary objectives for the proposed removal action:

- To ensure protection of human health and the environment
- To ensure that all of the potentially toxic metals are safely removed, tested and disposed in a manner consistent with the laws and regulations governing such materials
- To ensure that the Sacramento Stucco community is kept informed of this project and that all work is performed under DTSC oversight.

3.0 CHARACTERISTICS OF WASTE/MATERIAL TO BE TRANSPORTED

Roughly 5,000 cubic yards of soil contaminated with lead up to 19,000 mg/Kg and antimony up to 39 mg/Kg, alongside roughly 5 to 10 cubic yards of soil containing arsenic will be transported. The soil will be transported to a Class I or Class II designated waste landfill, depending on lead concentrations. The following laws and regulations govern the transport of this material:

- 40 CFR Part 263 – Standards Applicable to Transporters of Hazardous Waste
- 29 CFR Part 1910.120 – Hazardous Waste Operations and Emergency Response
- 49 CFR Parts 100 to 199 – Subtitle B, Other regulations Relating to Transportation
- Cal H&S Code Chapter 6.5 (Hazardous Waste Control), Articles 6 (Transportation), 6.5 (Hazardous Waste Haulers) and 8 (Enforcement)
- California Vehicle Code Section 2401.1 Transportation of Hazardous and Medical Waste
- CCR Title 22, Division 4.5, Chapter 12, Article 5 Standards Applicable to Generators of Hazardous Waste
- CCR Title 22, Division 4.5, Chapter 13, Articles 1-5 Standards Applicable to Transporters of Hazardous Waste
- CCR Title 8 Section 5192 – Hazardous Waste Operation and Emergency Response

4.0 DESTINATION OF WASTE/MATERIAL

The lead-contaminated soil will be transported to the following Class II (designated waste) landfill:

Norcal Waste Systems Ostrom Road Landfill
5900 Ostrom Road
Wheatland, CA 95692
(800) 208-2370, extension 229

The above location is 54 miles from the project site. If this site isn't available, the alternate destination is the following Class II landfill:

Norcal Waste Systems
Hay Road Landfill
6426 Hay Road
Vacaville, CA 95687
(800) 208-2370, extension 229

The above location is 32 miles from the project site.

The soil containing arsenic will be transported to the same location as the lead-contaminated soil. Any soil not accepted by a Class II landfill will be transported to the following Class I (RCRA) landfill:

Chemical Waste Management
Kettleman Hills Treatment Center
35251 Old Skyline Road
Kettleman City, CA
(209) 386-9711

5.0 TRANSPORTATION MODE

The soil will be transported by 20-ton dump truck. A dust control plan will be implemented. Six inches of freeboard will be maintained within the bed of the vehicle. Freeboard means the vertical distance from the highest portion of the edge of the load to the lowest part of the rim of the truck bed.

The soil will contain enough moisture to control dust emissions from the point of origin to the final destination. In the even that the previous measures are insufficient in preventing materials from escaping, tarps or other cargo covers will be employed.

The transporter will be

KJB Management Services
Alarcon Bohm
5301 Adeline Street
Oakland, CA 94608
Phone: 510-594-0670 fax 510-594-0671

Contractor License # 680187 C21 Building Moving, Demolition with Asbestos Certification.

California DTSC Registered Hazardous Waste Transporter Number: 4541, exp. 11/30/2007

Or

Den Beste Transportation
820 Den Beste Court
Windsor, CA 95492

California DTSC Registered Hazardous Waste Transporter Number: 2578, exp.
3/31/2008

6.0 ROUTE

From 860 Riske Lane, the route will go south on S River Road, enter US-50 East, take US Interstate-5 North, US Interstate-80 East, north on state route 70/65 then left on Forty Mile Road/Ostrom Road.

If the Vacaville facility is used, the route will begin taking US-50 West, which will merge with US Interstate 80 West to Dixon, then turn south on County Route 92/State Route 113 (Rio Dixon Highway) to Hay Road.

The route to Kettleman Hills turns south on US Interstate 5 from US-50 in Sacramento.

Real-time traffic conditions can be checked at:

<http://www.dot.ca.gov/traffic/>

Current road conditions are at:

<http://www.dot.ca.gov/hq/roadinfo/>

Truck routes are at:

<http://www.dot.ca.gov/hq/traffops/trucks/trucksize/truckmap/>

Planned lane closures are at:

<http://www.dot.ca.gov/hq/roadinfo/plannedwork.htm>

7.0 TRAFFIC CONTROL AND LOADING PROCEDURES

Traffic control measurements will be taken as necessary. It is not yet known if the excavation will occur during busy or high traffic hours for the area, but if the need for traffic control is present, several measurements will be implicated. The site is in an industrial area, and experiences low to moderate levels of traffic.

Once the loading procedure for each truck is established, it may be necessary to have flagmen at both ends of the facility, to make drivers aware that trucks will be entering or leaving the site. Proper signage will also be used on all streets leading to the site to let drives know in advance that trucks are entering and leaving the roadway.

On-site traffic and loading procedures:

Loading and covering will occur at a easily accessible loading location onsite, near one of the entry or exit gates to the site. The proposed plan would have trucks entering one gate, loading and covering, then leaving the second gate to the destination. Given the scope of proposed excavation onsite, it is likely that loading and staging areas will be moved throughout excavation.

Weighing will occur at the landfill.

Decontamination will be conducted onsite in the established decontamination area for vehicles.

Soil in the dump truck bed will be covered with a tarpaulin.

The soil will be transported by 20-ton dump truck (see RAW, Section 3.0). A dust control plan will be implemented. Six inches of freeboard will be maintained within the bed of the vehicle. Freeboard means the vertical distance from the highest portion of the edge of the load to the lowest part of the rim of the truck bed.

The soil will contain enough moisture to control dust emissions from the point of origin to the final destination. In the even that the previous measures are insufficient in preventing materials from escaping, tarps or other cargo covers will be employed.

All vehicles leaving the site will require inspection to ensure proper loading, covering/sealing, decontamination, placarding and manifesting.

8.0 RECORD KEEPING

The following record will be kept at the loading site for each trip:

- date
- time
- weight/volume
- waste/material
- trucking company
- driver
- vehicle

These records shall be kept by the foreman for the certified hazardous substances removal contractor.

The following documents will be carried with the load:

- Analytical results representing the load
- Hazardous waste manifest
- Maps and complete instructions describing the route to be traveled
- Emergency procedures and contacts

9.0 HEALTH & SAFETY

Health & safety procedures are described in a separate plan. The plan will be communicated to drivers in a tailgate meeting before transport. The site safety officer designated in the plan will enforce the provisions of the plan.

10.0 CONTINGENCY PLAN

If an accidental spill occurs during transportation of soil, no evacuation is necessary and no extraordinary containment measures need be taken

10.1 Containment descriptions

Standard erosion control methods can be implemented to prevent the loss of soil to rivers and streams. Water or chemical dust suppressants can be used for dust control.

10.2 Hazard analysis

The hazard from short-term exposure to the soil is low. The endangerment assessment for Sacramento Stucco was based on a lifetime of exposure in a residential setting.

10.3 Possible methods for containment and cleanup of an accidental release

Ordinary excavation and grading equipment can be used to cleanup a highway spill. Personnel should be trained in handling and transporting hazardous materials and wear level D personal protective equipment in accordance with the Health & Safety Plan.

APPENDIX H

October 2001

Information Advisory Clean Imported Fill Material



DEPARTMENT OF TOXIC SUBSTANCES CONTROL

It is DTSC's mission to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

State of California



California
Environmental
Protection Agency



Executive Summary

This fact sheet has been prepared to ensure that inappropriate fill material is not introduced onto sensitive land use properties under the oversight of the DTSC or applicable regulatory authorities. Sensitive land use properties include those that contain facilities such as hospitals, homes, day care centers, and schools. This document only focuses on human health concerns and ecological issues are not addressed.

It identifies those types of land use activities that may be appropriate when determining whether a site may be used as a fill material source area. It also provides guidelines for the appropriate types of analyses that should be performed relative to the former land use, and for the number of samples that should be collected and analyzed based on the estimated volume of fill material that will need to be used. The information provided in this fact sheet is not regulatory in nature, rather is to be used as a guide, and in most situations the final decision as to the acceptability of fill material for a sensitive land use property is made on a case-by-case basis by the appropriate regulatory agency.

Introduction

The use of imported fill material has recently come under scrutiny because of the instances where contaminated soil has been brought onto an otherwise clean site. However, there are currently no established standards in the statutes or regulations that address environmental requirements for imported fill material. Therefore, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this fact sheet to identify procedures that can be used to minimize the possibility of introducing contaminated soil onto a site that requires imported fill material. Such sites include those that are undergoing site remediation, corrective action, and closure activities overseen by DTSC or the appropriate regulatory agency. These procedures may also apply to construction projects that will result in sensitive land uses. The intent of this fact sheet is to protect people who live on or otherwise use a sensitive land use property. By using this fact sheet as a guide, the reader will minimize the chance of introducing fill material that may result in potential risk to human health or the environment at some future time.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.dtsc.ca.gov.

Overview

Both natural and manmade fill materials are used for a variety of purposes. Fill material properties are commonly controlled to meet the necessary site specific engineering specifications. Because most sites requiring fill material are located in or near urban areas, the fill materials are often obtained from construction projects that generate an excess of soil, and from demolition debris (asphalt, broken concrete, etc.). However, materials from those types of sites may or may not be appropriate, depending on the proposed use of the fill, and the quality of the assessment and/or mitigation measures, if necessary. Therefore, unless material from construction projects can be demonstrated to be free of contami-

nation and/or appropriate for the proposed use, the use of that material as fill should be avoided.

Selecting Fill Material

In general, the fill source area should be located in nonindustrial areas, and not from sites undergoing an environmental cleanup. Nonindustrial sites include those that were previously undeveloped, or used solely for residential or agricultural purposes. If the source is from an agricultural area, care should be taken to insure that the fill does not include former agricultural waste process byproducts such as manure or other decomposed organic material. Undesirable sources of fill material include industrial and/or commercial sites where hazardous ma-

Potential Contaminants Based on the Fill Source Area

Fill Source:	Target Compounds
Land near to an existing freeway	Lead (EPA methods 6010B or 7471A), PAHs (EPA method 8310)
Land near a mining area or rock quarry	Heavy Metals (EPA methods 6010B and 7471A), asbestos (polarized light microscopy), pH
Agricultural land	Pesticides (Organochlorine Pesticides: EPA method 8081A or 8080A; Organophosphorus Pesticides: EPA method 8141A; Chlorinated Herbicides: EPA method 8151A), heavy metals (EPA methods 6010B and 7471A)
Residential/acceptable commercial land	VOCs (EPA method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035), semi-VOCs (EPA method 8270C), TPH (modified EPA method 8015), PCBs (EPA method 8082 or 8080A), heavy metals including lead (EPA methods 6010B and 7471A), asbestos (OSHA Method ID-191)

**The recommended analyses should be performed in accordance with USEPA SW-846 methods (1996). Other possible analyses include Hexavalent Chromium: EPA method 7199*

Recommended Fill Material Sampling Schedule

Area of Individual Borrow Area

Sampling Requirements

2 acres or less

Minimum of 4 samples

2 to 4 acres

Minimum of 1 sample every 1/2 acre

4 to 10 acres

Minimum of 8 samples

Greater than 10 acres

Minimum of 8 locations with 4 subsamples per location

Volume of Borrow Area Stockpile

Samples per Volume

Up to 1,000 cubic yards

1 sample per 250 cubic yards

1,000 to 5,000 cubic yards

4 samples for first 1000 cubic yards + 1 sample per each additional 500 cubic yards

Greater than 5,000 cubic yards

12 samples for first 5,000 cubic yards + 1 sample per each additional 1,000 cubic yards

materials were used, handled or stored as part of the business operations, or unpaved parking areas where petroleum hydrocarbons could have been spilled or leaked into the soil. Undesirable commercial sites include former gasoline service stations, retail strip malls that contained dry cleaners or photographic processing facilities, paint stores, auto repair and/or painting facilities. Undesirable industrial facilities include metal processing shops, manufacturing facilities, aerospace facilities, oil refineries, waste treatment plants, etc. Alternatives to using fill from construction sites include the use of fill material obtained from a commercial supplier of fill material or from soil pits in rural or suburban areas. However, care should be taken to ensure that those materials are also uncontaminated.

Documentation and Analysis

In order to minimize the potential of introducing contaminated fill material onto a site, it is necessary

to verify through documentation that the fill source is appropriate and/or to have the fill material analyzed for potential contaminants based on the location and history of the source area. Fill documentation should include detailed information on the previous use of the land from where the fill is taken, whether an environmental site assessment was performed and its findings, and the results of any testing performed. It is recommended that any such documentation should be signed by an appropriately licensed (CA-registered) individual. If such documentation is not available or is inadequate, samples of the fill material should be chemically analyzed. Analysis of the fill material should be based on the source of the fill and knowledge of the prior land use.

Detectable amounts of compounds of concern within the fill material should be evaluated for risk in accordance with the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual. If

metal analyses are performed, only those metals (CAM 17 / Title 22) to which risk levels have been assigned need to be evaluated. At present, the DTSC is working to establish California Screening Levels (CSL) to determine whether some compounds of concern pose a risk. Until such time as these CSL values are established, DTSC recommends that the DTSC PEA Guidance Manual or an equivalent process be referenced. This guidance may include the Regional Water Quality Control Board's (RWQCB) guidelines for reuse of non-hazardous petroleum hydrocarbon contaminated soil as applied to Total Petroleum Hydrocarbons (TPH) only. The RWQCB guidelines should not be used for volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCS). In addition, a standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results should also accompany all analytical reports.

When possible, representative samples should be collected at the borrow area while the potential fill material is still in place, and analyzed prior to removal from the borrow area. In addition to performing the appropriate analyses of the fill material, an appropriate number of samples should also be determined based on the approximate volume or area of soil to be used as fill material. The table above can be used as a guide to determine the number of samples needed to adequately characterize the fill material when sampled at the borrow site.

Alternative Sampling

A Phase I or PEA may be conducted prior to sampling to determine whether the borrow area may have been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with DTSC or appropriate regulatory agency. However, if it is not possible to analyze the fill material at the borrow area or determine that it is appropriate for use via a Phase I or PEA, it is recommended that one (1) sample per truckload be collected and analyzed for all com-

pounds of concern to ensure that the imported soil is uncontaminated and acceptable. (See chart on Potential Contaminants Based on the Fill Source Area for appropriate analyses). This sampling frequency may be modified upon consultation with the DTSC or appropriate regulatory agency if all of the fill material is derived from a common borrow area. However, fill material that is not characterized at the borrow area will need to be stockpiled either on or off-site until the analyses have been completed. In addition, should contaminants exceeding acceptance criteria be identified in the stockpiled fill material, that material will be deemed unacceptable and new fill material will need to be obtained, sampled and analyzed. Therefore, the DTSC recommends that all sampling and analyses should be completed prior to delivery to the site to ensure the soil is free of contamination, and to eliminate unnecessary transportation charges for unacceptable fill material.

Composite sampling for fill material characterization may or may not be appropriate, depending on quality and homogeneity of source/borrow area, and compounds of concern. Compositing samples for volatile and semivolatile constituents is not acceptable. Composite sampling for heavy metals, pesticides, herbicides or PAH's from unanalyzed stockpiled soil is also unacceptable, unless it is stockpiled at the borrow area and originates from the same source area. In addition, if samples are composited, they should be from the same soil layer, and not from different soil layers.

When very large volumes of fill material are anticipated, or when larger areas are being considered as borrow areas, the DTSC recommends that a Phase I or PEA be conducted on the area to ensure that the borrow area has not been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with the DTSC.

For further information, call Richard Coffman, Ph.D., R.G., at (818) 551-2175.

APPENDIX I

Norcal Waste Systems Hay Road Landfill, Inc.

Waste Acceptance Criteria

RCI & Toxicity Acceptance Criteria (CCR Title 22)

Non-Reactive	(Reactivity)
pH \geq 2.0 or pH \leq 12.5	(Corrosivity)
Flash Point \geq 140°F (60°C)	(Ignitability)
Acute Aquatic 96-hour LC ₅₀ \geq 500mg/l	(Toxicity)

(RCI & Toxicity sampling frequency is one 4:1 composite per 500 cubic yards)

Metals Acceptance Criteria (CCR Title 22)

METAL	TTLIC (mg/kg)	STLC (mg/l)
Antimony (Sb)	500	15
Arsenic (As)	500	5
Barium (Ba)	10,000	100
Beryllium (Be)	75	0.75
Cadmium (Cd)	100	1
Chromium (Cr)	2,500	560/5
Cobalt (Co)	8,000	80
Copper (Cu)	2,500	25
Lead (Pb)	1,000	5
Mercury (Hg)	20	0.2
Molybdenum (Mo)	3,500	350
Nickel (Ni)	2,000	20
Selenium (Se)	100	1
Silver (Ag)	500	5
Thallium (Tl)	700	7
Vanadium (Va)	2,400	24
Zinc (Zn)	5,000	250

Please Note

- 1) Ostrom Road Landfill reserves the right to require the generator to perform additional analytical testing
- 2) Minimum sampling frequency is one 4:1 composite per 250 cubic yards
- 3) Soil must be > 50% solids with no free liquids
- 4) Total concentrations cannot equal or exceed the TTLIC values. If total concentrations ³ 10x's the STLC, a WET (Waste Extraction Test) is required. Soluble concentration from the WET cannot equal or exceed the STLC values.
- 5) RCI and toxicity testing is required if TPH gasoline >8,000 mg/kg. TPH diesel > 8,000 mg/kg, TPH JP-8>10,000 mg/kg, TPH JP-5 >8,000 mg/kg, TPH JP-4>8,000 mg/kg, TPH hydraulic oil>25,000 mg/kg, TPH motor oil>25,000 mg/kg, TPH bunker C>25,000 mg/kg.
- 6) Hay Road does not accept decommissioned radioactive waste.

Soil Analysis Guidelines

Gasoline, Leaded

TPH for low/med BP HC	EPA 5030 and 8015
BTEX	EPA 8020 or 8260
Lead	EPA 6010, 7240 or 7241

Gasoline, Unleaded

TPH for low/med BP HC	EPA 5030 and 8015
BTEX	EPA 8020 or 8260

Diesel

TPH for high BP HC	EPA 3550 and 8015
BTEX	EPA 8020 or 8260

Fuel Oil

TPH for high BP HC	EPA 3550 and 8015
BTEX	EPA 8020 or 8260

Jet Fuel (A, A-1)

TPH for high BP HC	EPA 3550 and 8015
BTEX	EPA 8020 or 8260

Jet Fuel (B, JP-1, 4, 5, 6, 8)

TPH for low/med BP HC	EPA 5030 and 8015
BTEX	EPA 8020 or 8260

Kerosene

TPH for high BP HC	EPA 3550 and 8015
BTEX	EPA 8020 or 8260

Product Oil, Lubricants

TPH for high BP HC	EPA 3550 and 8015
BTEX	EPA 8020 or 8260

Waste Oil

TPH for high BP HC	EPA 3550 and 8015
TPH for low/med BP HC	EPA 5030 and 8015
Volatile Organics	EPA 8260
Semivolatile Organics	EPA 8270
PCBs	EPA 8080
Cadmium, Chromium, Lead, Nickel, and Zinc	EPA 6010 or 7000
Dibenzofurnas (if PCBs are detected)	EPA 8280
Dioxins (if PCPs are detected)	EPA 8280

Norcal Waste Systems Ostrom Road Landfill, Inc.

Waste Acceptance Criteria

RCI & Toxicity Acceptance Criteria (CCR Title 22)

☞ Non-Reactive	(Reactivity)
☞ pH ≥ 2.0 or pH ≤ 12.5	(Corrosivity)
☞ Flash Point $\geq 140^{\circ}\text{F}$ (60°C)	(Ignitability)
☞ Acute Aquatic 96-hour $\text{LC}_{50} \geq 500\text{mg/l}$	(Toxicity)

(RCI & Toxicity sampling frequency is one 4:1 composite per 500 cubic yards)

Metals Acceptance Criteria (CCR Title 22)

METAL	TTLC (mg/kg)	STLC (mg/l)
☞ Antimony (Sb)	500	15
☞ Arsenic (As)	500	5
☞ Barium (Ba)	10,000	100
☞ Beryllium (Be)	75	0.75
☞ Cadmium (Cd)	100	1
☞ Chromium (Cr)	2,500	560/5
☞ Cobalt (Co)	8,000	80
☞ Copper (Cu)	2,500	25
☞ Lead (Pb)	1000	5
☞ Mercury (Hg)	20	0.2
☞ Molybdenum (Mo)	3,500	350
☞ Nickel (Ni)	2,000	20
☞ Selenium (Se)	100	1
☞ Silver (Ag)	500	5
☞ Thallium (Tl)	700	7
☞ Vanadium (Va)	2,400	24
☞ Zinc (Zn)	5,000	250

Please Note

- 1) Ostrom Road Landfill reserves the right to require the generator to perform additional analytical testing
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Soil Analysis Guidelines

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BTEX	EPA 8020 or 8260
Lead	EPA 6010, 7240 or 7241

☞ Gasoline, Unleaded

TPH for low/med BP HC	EPA 5030 and 8015
BTEX	EPA 8020 or 8260

☞ Diesel

TPH for high BP HC	EPA 3550 and 8015
BTEX	EPA 8020 or 8260

☞ Fuel Oil

TPH for high BP HC	EPA 3550 and 8015
BTEX	EPA 8020 or 8260

☞ Jet Fuel (A, A-1)

TPH for high BP HC	EPA 3550 and 8015
BTEX	EPA 8020 or 8260

☞ Jet Fuel (B, JP-1, 4, 5, 6, 8)

TPH for low/med BP HC	EPA 5030 and 8015
BTEX	EPA 8020 or 8260

☞ Kerosene

TPH for high BP HC	EPA 3550 and 8015
BTEX	EPA 8020 or 8260

☞ Product Oil, Lubricants

TPH for high BP HC	EPA 3550 and 8015
BTEX	EPA 8020 or 8260

☞ Waste Oil

TPH for high BP HC	EPA 3550 and 8015
TPH for low/med BP HC	EPA 5030 and 8015
Volatile Organics	EPA 8260
Semivolatile Organics	EPA 8270
PCBs	EPA 8080
Cadmium, Chromium, Lead, Nickel, and Zinc	EPA 6010 or 7000
Dibenzofurnas (if PCBs are detected)	EPA 8280
Dioxins (if PCPs are detected)	EPA 8280